Number 4
Volume XLVI JAN 15 1914 **JANUARY, 1914** $2.00 per year
$3.00 with Directory

TEXTILE WORLD RECORD

SPECIAL FEATURES

Imported Wool Fabrics Analyzed

Cost of Marketing Cotton Goods

The "Duvetyn" Finish

Grease Dyed Worsteds

F. HERRICK

LORD & NAGLE COMPANY, BOSTON, MASS.

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The TEXTILE-FINISHING MACHINERY CO.

Howard Building, Providence, R. I.

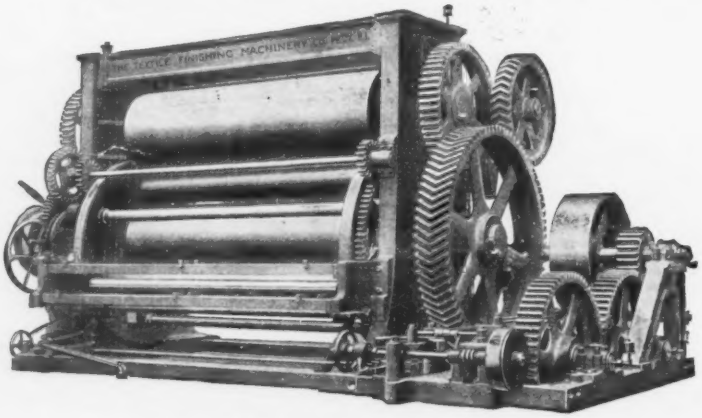
BUILDERS OF

Singeing, Bleaching, Mercerizing, Dyeing, Drying, Printing and Finishing Machinery

FOR

TEXTILE FABRICS AND WARPS

Plans and Estimates for Complete Plants



Hydraulic Mangle

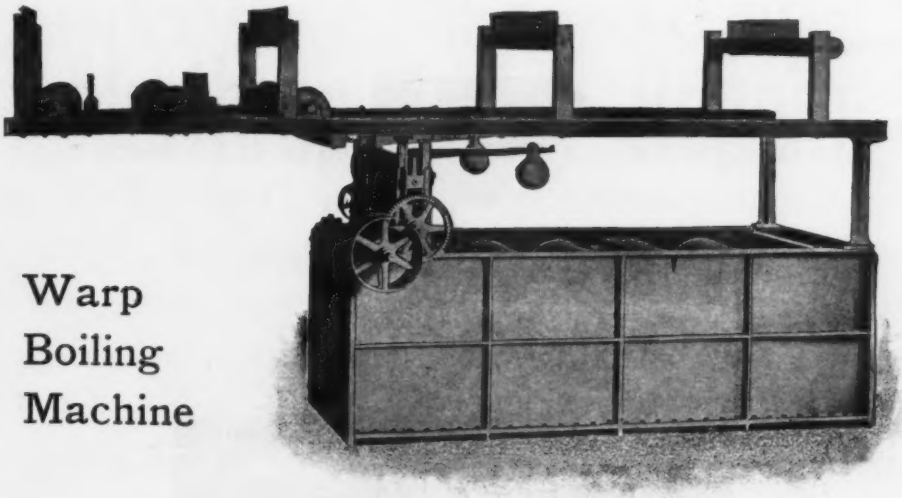
Calenders and Mangles for Finishing Damask, Linen, Crash and Towelling

Hydraulic Schreiner Calenders

Mercerizing Machinery

for

Cotton Goods and Warps



Warp
Boiling
Machine

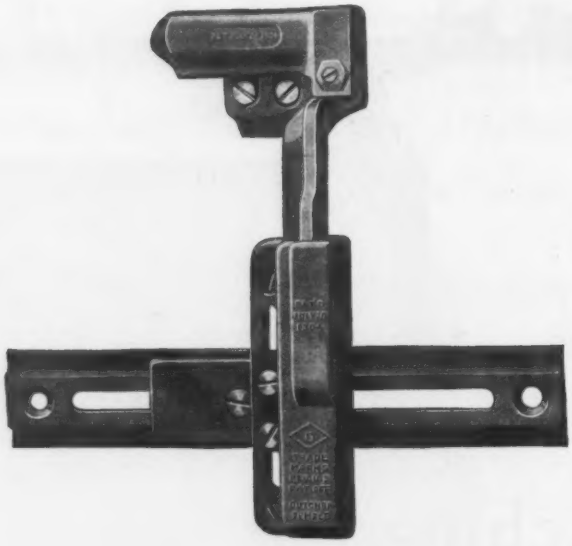
Bleaching,
Dyeing,
Drying,
Finishing
Machinery

for all textile fabrics.

H. W. BUTTERWORTH & SONS CO.

PHILADELPHIA, PA.

Providence Office, Room 417, Industrial Trust Building.



DUTCHER TEMPLES

Trade Mark Reg. U. S. Pat. Off.

DRAPER COMPANY

SOLE MANUFACTURERS

HOPEDALE, MASS.

Northrop Loom Repairs

TRADE MARK REGISTERED

We again call attention to the importance of purchasing Northrop loom repairs of the makers of the looms. We have spent thousands of dollars in fitting up moulding machines to insure the most uniform castings possible. It is false economy to buy such repairs of job foundries or other outside sources of supply.

Customers who purchase of us avoid the troubles incident to misfits, hard castings and the resultant bad cloth in the weave room.

We carry several hundred tons of finished loom repairs in stock for the convenience of our customers.

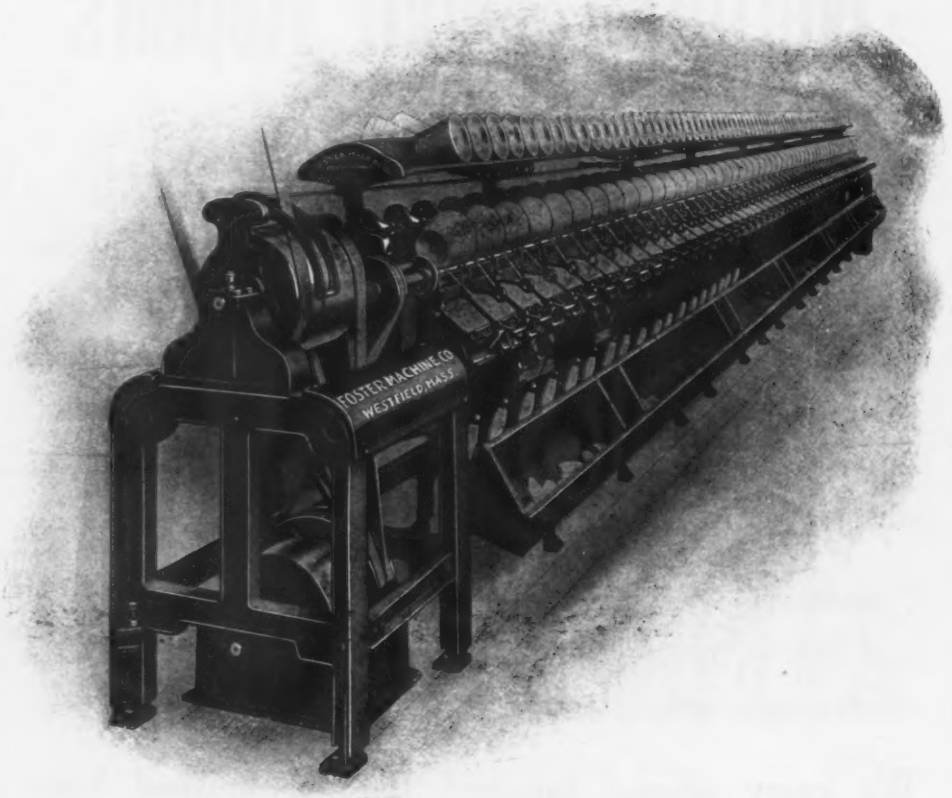
DRAPER COMPANY

HOPEDALE, MASS.

J. D. CLOUDMAN, Southern Agent

40 South Forsyth Street, Atlanta, Georgia

The Foster Cone Winder



The cone package has attained its present favor through the extension of the use of the Foster Cone Winder.

Foster finishing has eliminated cobwebbed cones, ribbon wind chafing, loose ends and guide rubbed cones.

75 per cent of all the knitting yarns produced in the United States are wound on this machine.

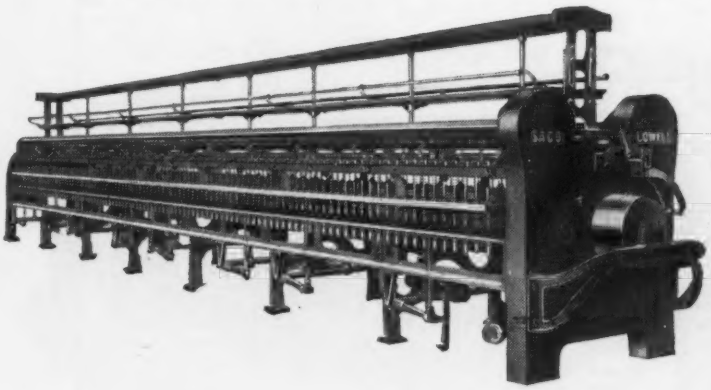
Foster Machine Company

Westfield, Mass.

John Hill, *Southern Agent*, 3rd National Bank Building, Atlanta, Ga.

Saco-Lowell Shops

TEXTILE MACHINERY



Shops—
Lowell, Mass.
Biddeford, Maine
Newton Upper Falls, Mass.

Executive Offices—
77 Franklin Street
Boston, Mass.

Southern Agent, ROGERS W. DAVIS,
Charlotte, N. C.

COMPLETE COTTON MILL EQUIPMENT
Including:
Pickers
Cards
Drawing
Evener Drawing
Roving
Spinning
Twisters
Slashers
Spoolers
Reels
Winders
Warpers
Looms

WASTE RECLAIMING MACHINERY

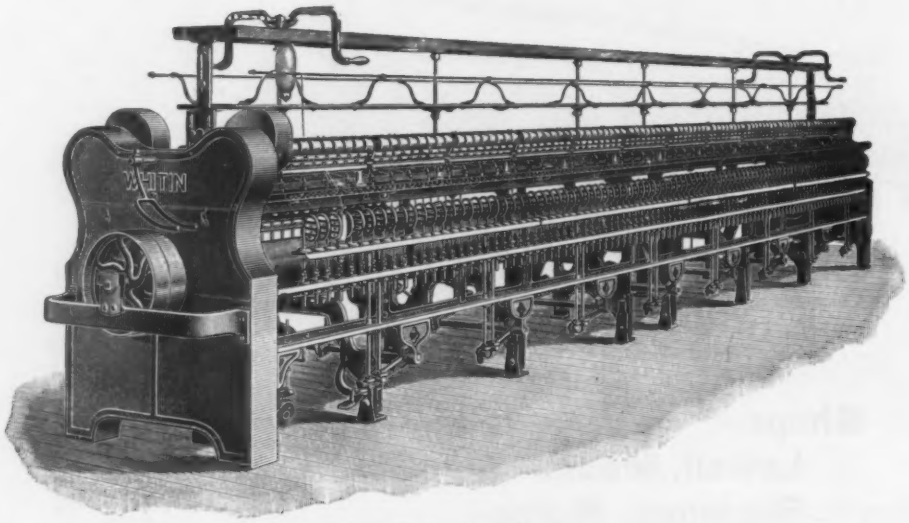
WORSTED MACHINERY
Including:
Revolving Reels,
Gill Boxes
Drawing Frames,
Reducing and Roving Frames,
Cap Ring and Fly Spinning and Twisting Frames
Jack Spoolers

The Whitin Machine Works

Whitinsville, Mass.

BUILDERS OF

Cotton Mill Machinery



Ring Spinning Frame

CARDS
COMBERS
DRAWING FRAMES
ROVING FRAMES
SPINNING FRAMES
SPOOLERS
TWISTERS
REELS
LONG CHAIN QUILLERS
LOOMS AND DOBBIES

Southern Agent: STUART W. CRAMER, Charlotte, N. C.

Cools in Summer.
Heats in Winter.
Humidifies and Ventilates
all the year round.

If we can prove that the Carrier System does all this and does it efficiently, it's the system you want for your mill, isn't it? We know of no other system which dominates such a broad sphere of atmospheric control.
The Carrier system works automatically. Wouldn't you be interested in knowing what it is doing for others? We have a catalog.

Carrier Air Conditioning Company
of America
39 Cortlandt St., New York

BUFFALO
490 Broadway
BOSTON
1862 Beacon St.
Brookline, Mass.
PHILADELPHIA
732 Real Estate Trust Bldg.
CHICAGO
Fort Dearborn Bldg.
Clark & Monroe Sts.

LEIGH & BUTLER

SUCCESSORS TO

EVAN ARTHUR LEIGH

232 Summer Street (opposite the South Station), Boston, Mass.

SOLE AGENTS

IN THE UNITED STATES AND CANADA FOR

Platt Bros. & Co., Ltd.

BY FAR THE LARGEST MAKERS IN THE WORLD OF

Cotton, Woolen and Worsted Machinery

Platt's Patent Opening and Picking Machinery.
Platt's Cotton Comber — will comb from 7-8" stock to Sea Islands.
Platt's Special Machinery for Making Cotton Waste into Yarns.
Platt's Special Machinery for Making French Worsted Yarns.
Platt's Woolen and Worsted Carding Engines, Special Designs.
Platt's Cotton, Cotton Waste, Woolen and Worsted Mules.

MATHER & PLATT, LTD.

Dyeing and Finishing Machinery.

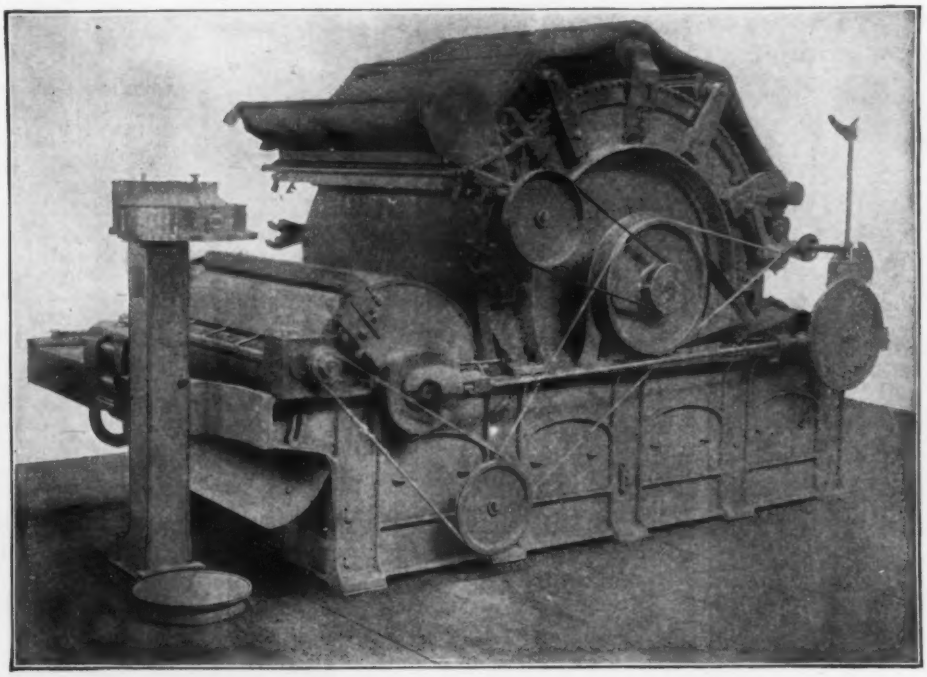
Archbutt-Deeley System for purifying and softening water.

JOSEPH SYKES BROS. Card Clothing for Cotton.
JAMES CRITCHLEY & SONS. Card Clothing for Woolen and Worsted.
WILSON BROS. BOBBIN CO. Bobbins, Shuttles, Etc.
THOMAS B. HAIGH. Double Loop Bands, Spinning Tape, Etc.
DRONSFIELD BROTHERS. Grinding Machinery and Emery Filleting.
HARDING'S Fallers, Pins and Circles.
The Best French and English Combing and Rubbing Aprons.
Card Flats reclothed and Lickers-in rewound.

MASON MACHINE WORKS

Taunton, Mass. **Greenville, S. C.**

Builders of
Revolving Flat Cards, Drawing Frames,
Spinning Frames, Looms, Dobbies, Etc.



Superior Loom Cranks for Repairs

How one big plant is saving money

(*From "Paper" of March 19, 1913*)

THE interesting and suggestive announcement is made by one of the largest industrial corporations in the world, that its entire plant is to be painted a pure white, inside and out.

The object is to encourage orderliness and cleanliness in the maintenance of the mills. Cleanliness promotes caution and caution tends to reduce accidents, thus in the end effecting a saving to the company.

Many of the most serious fires and accidents which visit industrial plants are directly traceable to a lack of cleanliness.

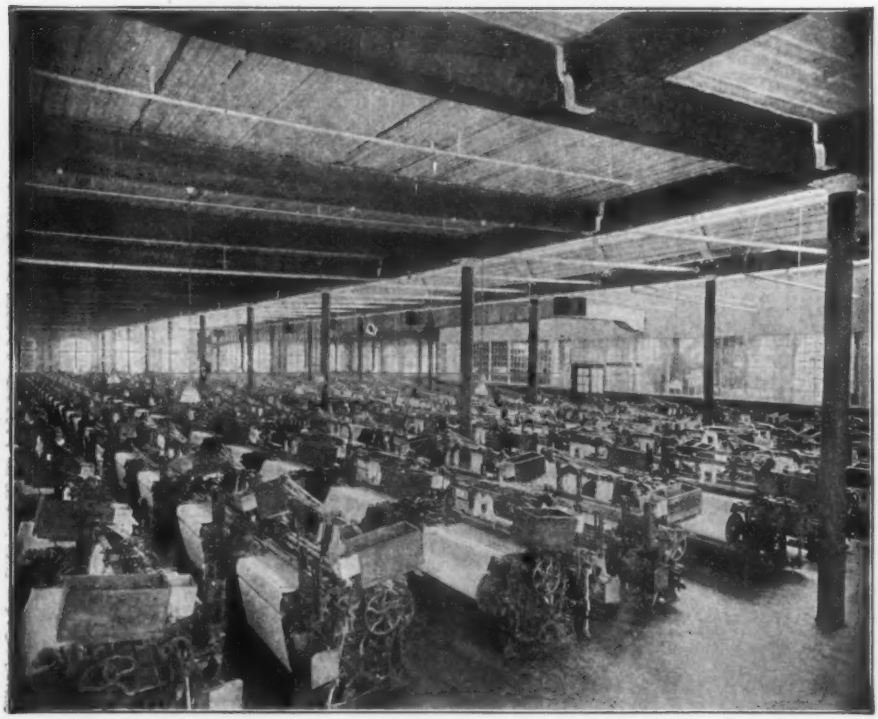
RICE'S MILL WHITE

Will give the ceilings and walls of your factory a glossy, tile-like finish, to which dust and dirt do not readily adhere and which can be washed like an enamel. It will pick up and carry the light into neglected dark corners, compelling cleanliness in every portion of your plant. It is a sanitary paint, containing no lead or other poisonous substances.

Rice's is the *original* "Mill White"—the paint which made the reputation of the name ten years ago. It is made by a special process which no other paint manufacturer can use.

Write for booklet and sample board

U.S. Gutta Percha Paint Co.
20 Dudley Street Providence, R. I.



Another recent installation

400 "Ideal" Automatic Looms

on 5 harness sateens

These looms were installed as the result of a test during which the superiority of Stafford Looms over all competitors was clearly demonstrated

THE STAFFORD COMPANY

READVILLE, MASS.

FRED H. WHITE, Southern Agent - - Charlotte, N. C.

By adaptation of

Josephy

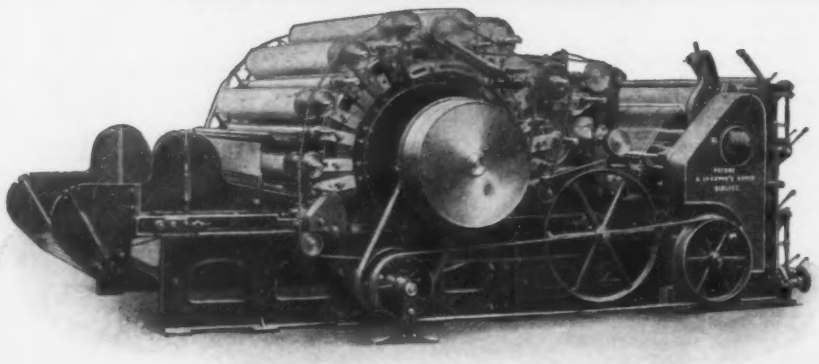
Cards & Ring Spinning Frames

for Wool, Cotton-Waste, Vicuna-cotton, Flax-waste, Etc.

you get

highest output finest products

save on costs of production

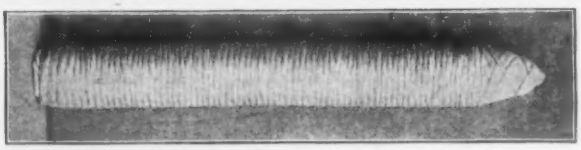


Call for information and estimate from sole agent for U. S. A.

FELIX BRECHER, 927 Lafayette Building, **Philadelphia, Pa.**

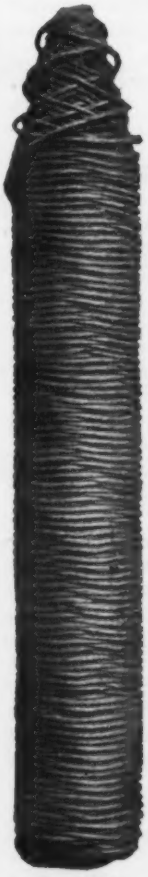
or directly from

G. Josephy's Erben, Bielitz, Austria

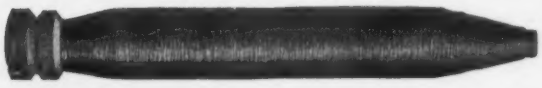


No. 2

No. 1 and No. 2—Cops to weave from inside seven-eighths to three inches diameter and up to seventeen inches long. Suitable for various kinds of coarse goods such as grass matting, cotton bagging, cocoa matting, all kinds of carpets, felts, chinchilla, linen, jute, flax, asbestos, hose and narrow fabrics such as wicks, belting, webbing, surcingles, halters, etc.



No. 3 and No. 4 Shuttle Bobbins from seven-eighths to two inches in diameter and any length up to twelve inches. Suitable for all kinds of duck, upholsteries, tapestries, asbestos, ratana or any kind of fancy yarns for automatic or other looms.



No. 1 No. 4 No. 3

OSWALD LEVER CO., Inc.

Lehigh Avenue and Front Street, Philadelphia, Pa.

Builders of Textile Machinery WINDERS ESPECIALLY

Parks' Piping Parables

The day of rule 'o thumb is rapidly passing

Parks' Piping Parables is a little magazinelet that has been going to the elect for ten years.

If you get it you will not need to read this page, for we are "cribbing"—to conserve the phosporous in our alleged mind.

Parks' Piping Parables has had a mission all these years;—saying in a modest way that wherever a chimney is, there would we be also.

Meaning that some piping might result.

For the past few years, you have thought of us—if you have flattered us by thinking of us at all—as being in the humidifying business.

And please keep on thinking so.

Being in the humidifying business was result. Being in the piping business was cause.

The G. M. Parks Company has been in the mill piping business for forty-two years come next spring.

And we are just foolish enough to think that the foundation is just as essential as the superstructure. We believe we do better humidifying—because of our piping experience.

And also—

We believe that the textile mill problem of humidifying, heating, air-cleaning and ventilating—if you choose to add this—are so closely allied as to be really one larger problem.

Conservation of heat units—making steam do double duty is our hobby—as it applies to piping and allied subjects.

Competition in the piping business with us is one of ideas more than one of as price. Ideas first.

We don't like to do cheap work.

If you really want cheap piping—and I don't believe you do—we know there are opportunities—tricks some call them—to make a job cheap.

We don't believe you would ultimately be satisfied.

Parks' piping—done our way—we stand back of. Cheapened, with all the heart taken out of it; nothing left but the chaff—

Confidentially we don't want to talk to you on that basis.

But rather on a basis of better, lasting results—for you.

Should a Piping Contracting House Supplant Your Own Organization?

There are just two answers to this question. Yes and No.

Yes, if you can get better service.

No, if you can't.

There are many mills that keep a master mechanic and crew. Among other things, it is a part of the business of this crew to make such repairs, including piping repairs, as it can.

Occasionally, having this crew on hand, the mills in question find it to their advantage to have it do construction work.

There is nothing to be said against this, any more than there would be against one man caring for his own car while another stables his in a public garage.

It all depends.

Somewhere it is written that one cannot serve two masters—yet here is an instant where we think we can.

But the premise is wrong. There are not two masters. Just one with varying conditions.

Many times there are problems of piping construction and design that, if you ask your own master mechanic, he would be the first to admit he was not geared up for.

He may lack tools, equipment or experience in this particular job.

And that's nothing against him. Then again there is the class of work he can do—all he lacks is the materials; perhaps some pipe cut to sketch; a pipe bend or a valve or two.

And there again we can serve you—better, I try to think—than anyone else.

Not because we have surrounded all there is to be known about this class of order, but because each one that comes in gets personal attention. And we are more fussy about filling such orders as these than we are our own.

By the way, I wonder if you know that we cut pipe up to 16 inch in diameter, with modern expeditious machinery. And have a stock of goods that is commensurate with it.

PARKO

The G. M. Parks Company

Fitchburg, Massachusetts

What it is NOT—and what it IS

The "Turbo" is not a user of second hand water.

The "Turbo" is not equipped with sheet metal contraptions to catch dust. Nor with drain pipes to clog.

It has no motor, fan or other moving parts to cause trouble.

It has no straining cloths or receiving tank to be kept clean.

It is not complicated and therefore not subject to breakdowns,—not in need of frequent repairs.

It is not a big cumbersome system that shuts off the light and requires high posted rooms.

The "Turbo" is—THE humidifier that completely vaporizes the water it uses.

It is—THE humidifier that prevents accumulation of dust and lint, keeping your work rooms in sanitary condition.

It is—THE humidifier that maintains humidity, the humidifier with the guarantee.

It is—THE humidifier that is the most flexible and adaptable, that keeps out of the way.

It is—THE extremely simple and economical humidifier for textile mills.

It is because of what it is NOT, as well as because of what it IS that the "Turbo Humidifier" is ordered and re-ordered to the second and third "repeat."

It is because humidifying is a necessity, and because "Turbofied means Satisfied" that the "Turbo" has so many "boosters."

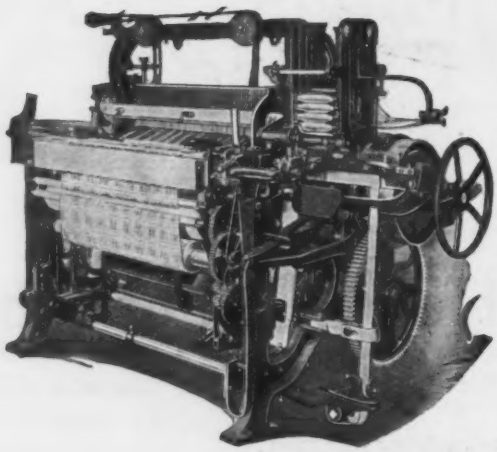
We would like to send you a list of these "boosters," or a catalogue or an engineer, or all three if you so elect. Do you?

The G. M. Parks Company

Fitchburg, Mass.

Southern Office, 200 Commercial Bank Building, J. S. Cothran, Mgr.

Crompton & Knowles Loom Works



Automatic Gingham Looms

One of our latest productions for weaving goods of two or more colors in the filling. Like every loom we build, it has the advantage of a successful mill test.

WORCESTER, MASS.

Providence, R. I. **Philadelphia, Pa.**

Southern representative, ALEXANDER & GARSED, Charlotte, N. C.

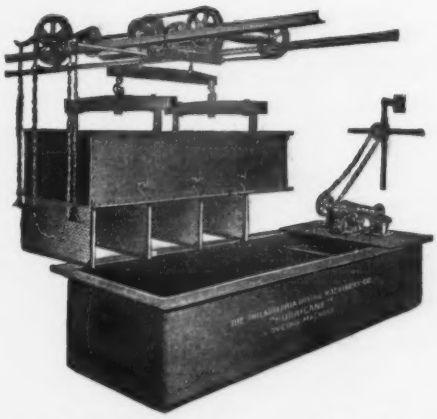
Dyeing Machinery

For

Hosiery,

Skein Yarn,

Slubbing, etc.



BETTER

Dyeing

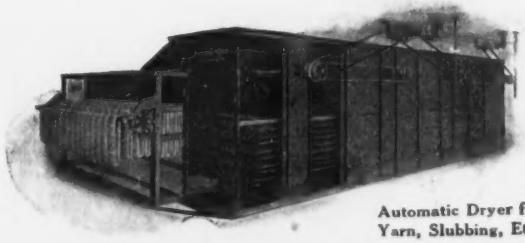
AT

Less Expense

The BEST and Most Economical Dyeing Machine

Give us an Opportunity to Prove our claims

"Hurricane" Circulating Dyeing Machines are built in various sizes and types



Automatic Dryer for Yarn, Slubbing, Etc.

COMPLETE EQUIPMENTS FOR

DYEING

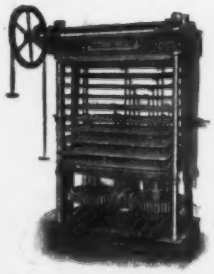
SCOURING

BLEACHING

CARBONIZING

FIRE-PROOF DRYERS

Steel Construction,—Insulated with Asbestos



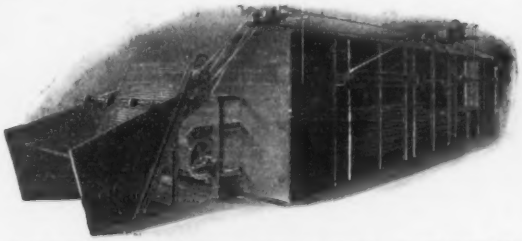
Power Screw and Hydraulic PRESSES

FANS

MOTOR

AND

BELT-DRIVEN



AUTOMATIC STOCK DRYER

(With Sectional-Continuous Conveyor)

For Cotton, Wool, Hair, Rags, Etc.

THE PHILADELPHIA DRYING MACHINERY CO.

Main Office and Works:
6721 Germantown Ave., Philadelphia, Pa.

Boston Office:
53 State Street

That Your Business May

Progress

For the year 1914 is the sincere wish of The Textile Exhibitors Association, Inc.

From the very start "PROGRESS" has marked every feature of

THE

FOURTH NATIONAL TEXTILE EXHIBITION

Mechanics Building, Boston, Mass.

APRIL 27 TO MAY 2, 1914

The possibilities of this **Exhibition** as an advertising medium have been recognized by all leading manufacturers in the **textile** and **allied industries.**

Our first letter to the trade resulted in fifty-one (51) exhibitors. This number has steadily increased so that now there are one hundred and twenty six (126.)

This hearty cooperation and endorsement of the manufacturers is the best proof of the **true value** of this exhibition that we can offer you.

If you are not already an exhibitor, write **today** and engage your space.

Address all communications to

CHESTER I. CAMPBELL, Sec'y and General Manager

Executive Offices, 5 Park Square, Boston, Mass.

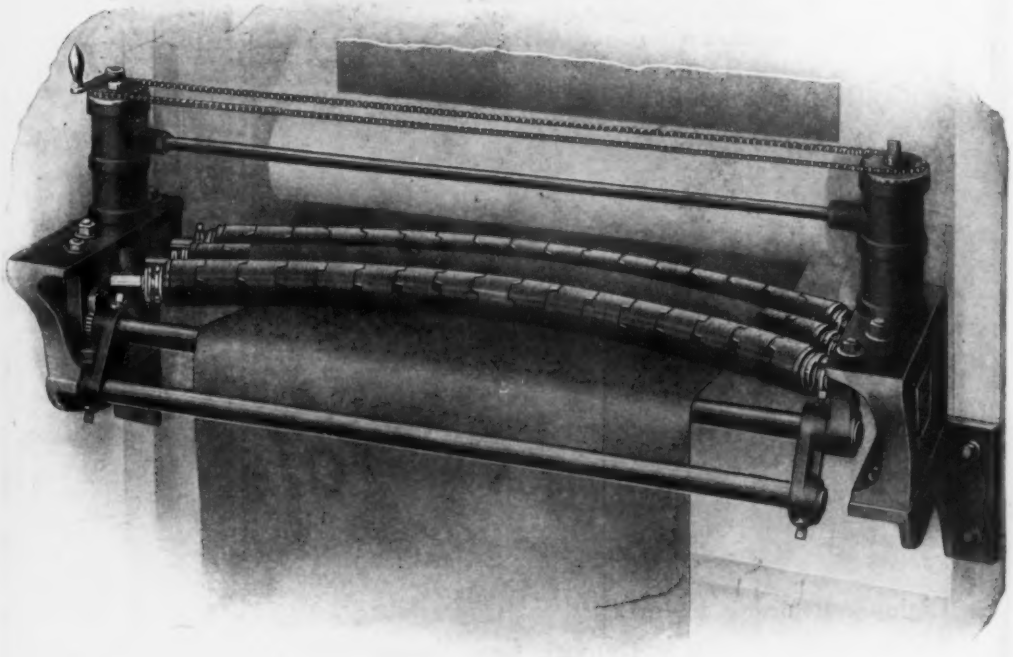
THOMAS LEYLAND & COMPANY

F. T. Walsh, Manager

60 India Street, Boston, Mass. WORKS AT READVILLE, MASS.

Sole Manufacturers of THE WILLIAM MYCOCK

Improved Regulating Cloth Expander

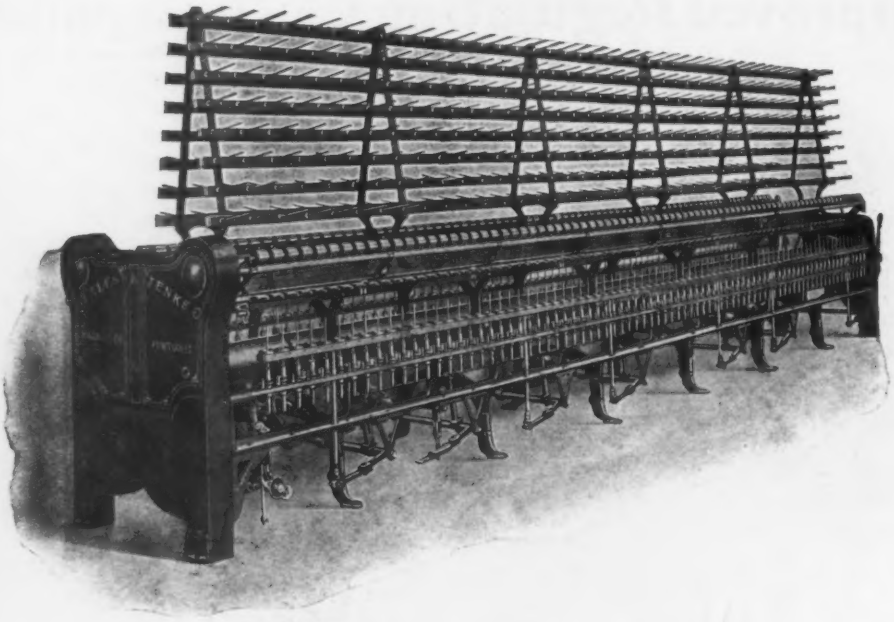


Expander attached to Calendar showing Regulating Motion and Adjustable Tension Bars

This Expander and its improved features are fully protected by basic United States patents, under which the builders will maintain their patent rights against any who may violate such rights by building, selling or using machines of this character.

Scutchers, Sewing Machines, Open Bleaching Machines, Blanket Washers for Calico Printers, Guides, Etc.

Cotton Machinery by Specialists



Improved Ring Twister

Lightest Running Frames

Require Less Power

Less Cost for Upkeep

We Call Special Attention to Our Tape Drive

Fales & Jenks Machine Co.

Southern Representative:
J. H. MAYES, Independence Bldg.
Charlotte, N. C.

Northern Representative:
WM. V. THRELFALL, Marshall Bldg.
Boston, Mass.

Cotton Machinery by Specialists

Pickers and Revolving Flat Cards

POTTER & JOHNSTON MACHINE CO.

Pawtucket, R. I.

Drawing and Roving Machinery

WOONSOCKET MACHINE & PRESS CO.

Woonsocket, R. I.

Ring Spinning and Twisting Frames

FALES & JENKS MACHINE CO.

Pawtucket, R. I.

Spoolers, Winders and Reels

EASTON & BURNHAM MACHINE CO.

Pawtucket, R. I.

Warpers and Beamers

T. C. ENTWISTLE CO.

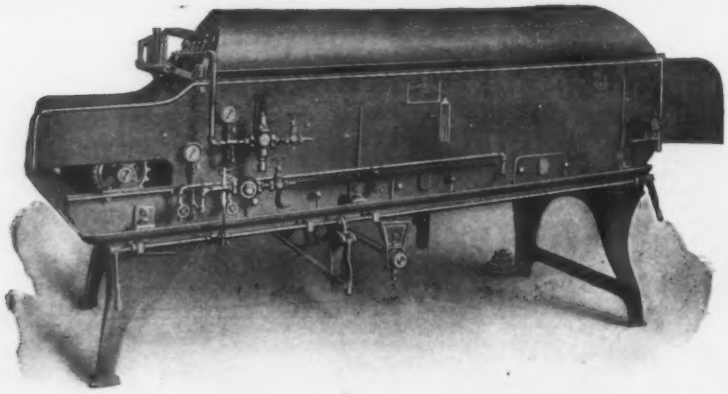
Lowell, Mass.

Southern Representative:
J. H. MAYES, Independence Bldg.
Charlotte, N. C.

Northern Representative:
WM. V. THRELFALL, Marshall Bldg.
Boston, Mass.

The Yarn Conditioning Machine

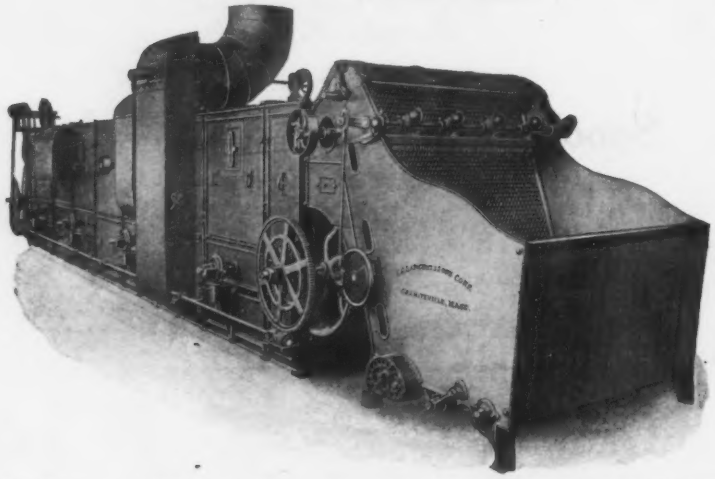
Sets the twist in your filling and overcomes kinky filling difficulties. It conditions without injuring the bobbins



The Sargent Drying Machines

Metal Construction
Asbestos Insulation

Scientifically designed for greatest economy in drying Cotton, Wool, Hair.



Wool Washers, Wool Dusters and Openers, Burr Pickers
Complete Carbonizing Plants
Automatic Feeds for Cotton and Wool

C. G. Sargent's Sons Corp., Graniteville, Mass.

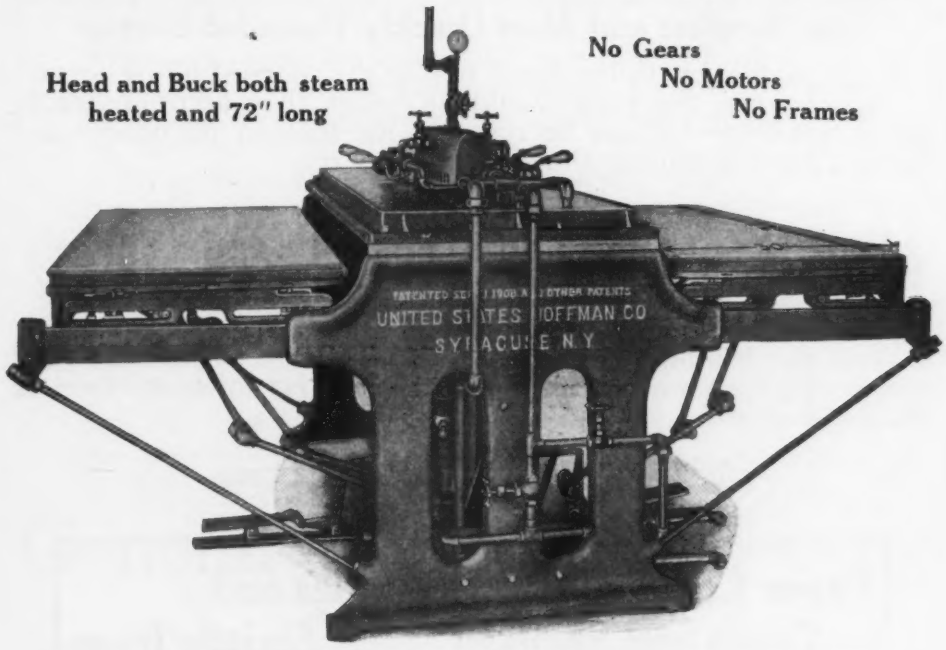
Start the New Year Right

By Saving Money in your Press Room,
By turning out better work,
By enlarging your capacity,
By using a

Hoffman "FFF" Underwear Press

Head and Buck both steam heated and 72" long

No Gears
No Motors
No Frames



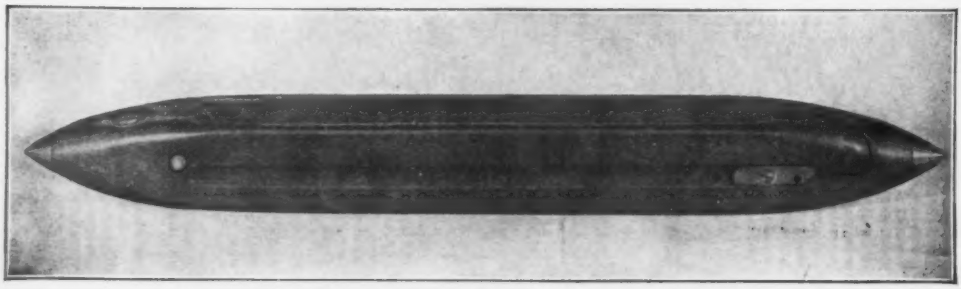
Any finish required can be given with a "HOFFMAN" Underwear Press and the application of Live, Dry, Steam gives the garment a very Superior Finish.

United States Hoffman Co.

SYRACUSE, New York

NEW HAND-THREADING SHUTTLE

PATENTED



The Simplest and Most Quickly Threaded Shuttle

It can be filled with the finest silk or the coarsest filling—won't unthread when the yarn "balloons"—lint that accumulates is easily removed—felt can be inserted for tension purposes—and being a hand threading shuttle, it is sanitary.

Use Never-Slip Cop Spindles and Tubes

And Do Away With All Filling Waste

With this combination we will guarantee that you can run your looms with longer cops and at much higher rate of speed than is otherwise possible.

Never-Slip Cop Tube

Paper Cop Tubes Cones and Shells

Send Your samples and we will quote prices on any lot desired

Shuttles and Shuttle Irons

For All Textile Purposes

Trial orders solicited—Satisfaction guaranteed

American Textile Specialty Machinery Co.

670 Eddy Street - Providence, R. I.

13th St. and Boulevard, Long Island City

The Most Useful Power for the Least Money---From Any Source

Comparing the mechanical lineshaft drive from engine with the G–E individual motor drive, brings out general truths applicable to every industry. Every man wanting more power, or desiring to pay less for power, should read these comprehensive facts:

More power can be generated from a given amount of coal, over extended periods with less maintenance, by using a Curtis Steam Turbine than with any other power equipment. You get maintained efficiency without constant valve grinding and repairs due to many moving parts.

More useful power can be generated from a given amount of water, oil, sun or wind power where the power is to be conveyed any considerable distance, by G–E generators than with any other equipment.

More power can be obtained at the place where it is to be used with electric transmission, if the distance is considerable than with any other form of power transmission. This is due to the high efficiency and long life of G–E generators coupled with the elimination of power losses in transmission due to steam condensation, lineshaft friction and belt slippage.

It will be profitable for you to consult us. The assistance of any part of our organization in solving your power problems is extended to your local power company, or our nearest motor agency.

General Electric Company

Largest Electrical Manufacturer in the World

General Office: Schenectady, N. Y.

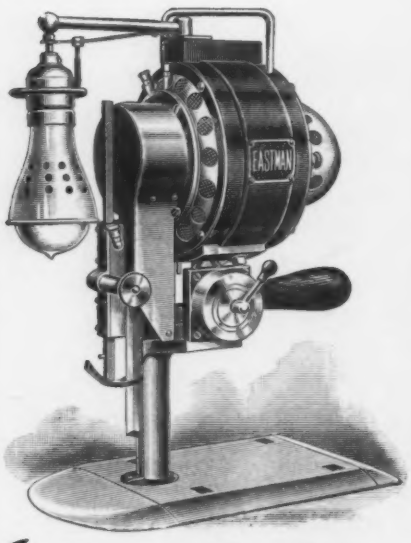
Address Nearest Office

Atlanta, Ga.
Baltimore, Md.
Birmingham, Ala.
Boise, Idaho.
Boston, Mass.
Buffalo, N. Y.
Butte, Mont.
Charleston, W. Va.
Charlotte, N. C.
Chattanooga, Tenn.
Chicago, Ill.
Cincinnati, O.
Cleveland, O.
Columbus, O.
Davenport, Iowa.
Dayton, O.
Denver, Colo.
Detroit, Mich.
(Office of Agent.)
Elmira, N. Y.
Erie, Pa.
Fort Wayne, Ind.
Hartford, Conn.
Indianapolis, Ind.
Jacksonville, Fla.
Joplin, Mo.
Kansas City, Mo.
Keokuk, Iowa.
Knoxville, Tenn.
Los Angeles, Cal.
Louisville, Ky.
Mattoon, Ill.
Memphis, Tenn.
Milwaukee, Wis.
Minneapolis, Minn.
Nashville, Tenn.
New Haven, Conn.
New Orleans, La.
New York, N. Y.
Niagara Falls, N. Y.
Omaha, Neb.
Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Ore.
Providence, R. I.
Richmond, Va.
Rochester, N. Y.
Salt Lake City, Utah.
San Francisco, Cal.
St. Louis, Mo.
Schenectady, N. Y.
Seattle, Wash.
Spokane, Wash.
Springfield, Mass.
Syracuse, N. Y.
Toledo, Ohio.
Washington, D. C.
Youngstown, O.

For Texas, Oklahoma and Arizona business refer to Southwest General Electric Co., (formerly Robson Electric Co.)—Dallas, El Paso, Houston and Oklahoma City.

For Canadian business refer to Canadian General Electric Company, Ltd., Toronto, Ont. 4778

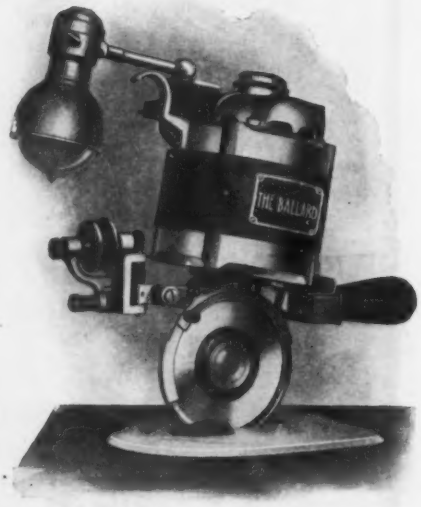
Hess-Bright Ball Bearings



Are Used On These Cloth Cutting Machines

TRADE MARK

HB- DWF



That is One Reason Why They Are So Successful

It is safe to assume that the machines that use the best of all ball bearings are pretty good machines in other respects

HESS-BRIGHT BALL BEARINGS
Built for Endurance

Are troubleless, wearless, and as near to frictionless as it is possible for bearings to be. They are oil tight. Besides saving on oil bills they prevent damage from oil dripping and make "drip pans" unnecessary. If you want to stop all your bearing troubles—consult
Our Engineering Department—it is at your service—gratis.

The Hess-Bright Manufacturing Company

Pioneers in the introduction of Annular Ball Bearings

Front Strcet and Erie Avenue, - Philadelphia, Pa.

PHILADELPHIA
666 North Broad Street

NEW YORK
1974 Broadway

CHICAGO
1800 Michigan Avenue

→ See next issue for advertisement of Hess-Bright Ball Bearing Hangers ←

DRIVING SIDE

The Hunter

NO. 10
FULLING
MILL

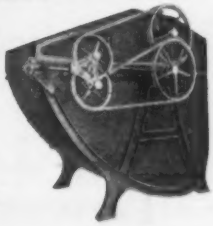
GEAR DRIVE

CLOTH WASHERS

PEICE DYE
KETTLES

SOAPING
MACHINES

BELT DRIVE



ROPE DRIVE

JAMES HUNTER MACHINE CO.

NORTH ADAMS, MASS., U. S. A.

LANE

Canvas Mill Baskets Boxes and Trucks

FIG. 22.

Round Taper Style with Renewable Hardwood Shoes.
The Ideal Waste Basket. Made also without wooden shoes.

Increase Dividends Through

Less Waste **Lighter Weight**

Longer Life

Lower Ultimate Cost

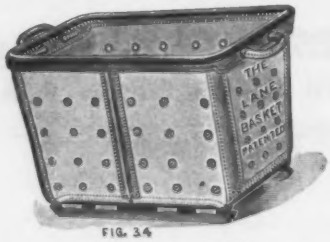


FIG. 34

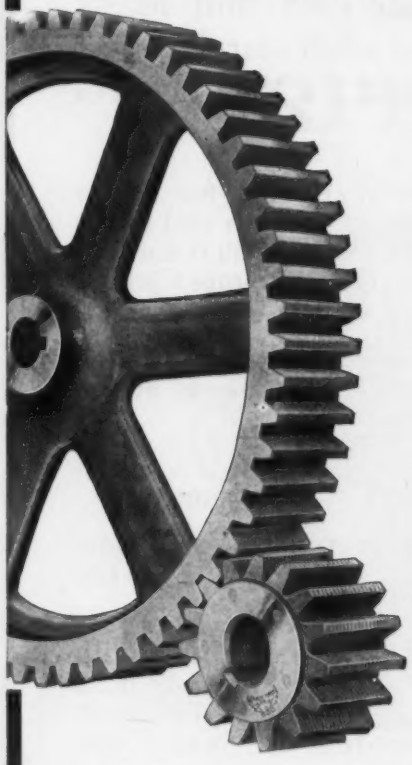
Oblong Taper Style.
A Steaming Basket with Great Durability and Quick Steaming Qualities.
Made in shape or size to fit any steam box.

A STYLE FOR EVERY USE

W. T. LANE & BRO., Mfrs.

POUGHKEEPSIE, N. Y.

When you've tried others and want something better-



NEW PROCESS

Noiseless Pinions

absorb vibration and protects intermeshing gear teeth—in fact the entire machine—much like the automobile shock absorber takes up shocks and protects the automobile tires, springs, body, etc. This is proved wherever New Process Noiseless Pinions are used.

Besides, it is firmly established that no other rawhide approaches New Process in strength and long life.

Made in every desirable type and size and more exclusively used than all other makes of rawhide pinions put together.

NEW PROCESS IS TO ALL OTHER RAWHIDE AS STEEL IS TO IRON

N.P.R.H. REG. U.S. PAT. OFF.

NEW PROCESS GEAR CORPORATION

SYRACUSE, N.Y.

Canadian Agents: Robert Gardner & Son, Ltd., Montreal

81

Starch

THE particular case of your own mill needs careful study to determine what starch is best suited to *your* SIZING and FINISHING problems.

We have reduced the manufacture of starches for textile work to a science by years of factory investigation and laboratory research. We are ready to take up the special case of your mill and point out to you what starches are most adaptable and reliable for your purposes.

Six years of careful investigation of conditions in the cotton mills of the country has taught us the needs of the trade.

Six years' research in the best equipped Starch Laboratory in America has put us in touch with starch chemistry.

Six years of manufacturing, with cotton mill problems in mind, has produced our special Brands of Textile Starches.

We want to send our special starch expert to your mill. We want him to go into the matter of sizing with your boss of slashing—check up your sizing processes—find out whether you are now using the starches that will insure you the most efficient and economical results.

This special starch expert service is absolutely free—send us a sample of the starches you are using. We will give you an exact analysis of them and send our practical man to study your needs. Write a letter now to our Mill Starch Department.

Corn Products Refining Company
NEW YORK

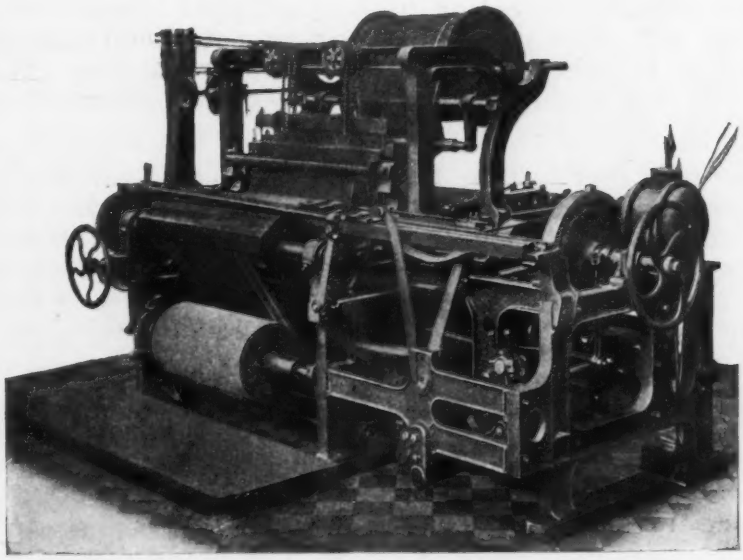
Starch

Saechsische Webstuhlfabrik

(LOUIS SCHOENHERR)

Chemnitz, Germany

CARPET LOOMS



Sole Representative in the U. S. A. and Canada

A. W. BUHLMANN

Textile Engineer

200 Fifth Avenue - NEW YORK

A SATISFIED USER

IS THE BEST ADVERTISEMENT

If we will prove to you that we can actually cut down your operating costs and increase your output in one operation will you at least look into our proposition?

And that is exactly what we CAN do.

We will take the cotton harness off your looms and in its place we will put harness of everlasting steel and make it last as long as ten sets of the old style cotton harness We can show you any number of mills that wouldn't think of going back to cotton harness now.

Not only that, but the Duplex Steel Heddle will last easily ten times as long, to say nothing of the time saved in changing and "petling" it on the loom. It is child's play to transfer Duplex Heddles off and on to suit the thread per inch in the warp. Your breakage will be decreased and you will get a corresponding increase in the amount of your production. Nor does every new sley and weave mean new harness.

We can tell you a hundred other reasons why you ought to equip with the Duplex Heddle—but it would read too much like a dream. You probably never believed such a heddle could be made—but it only goes to show what intense concentration and specialization by trained mill men will do.

See us at the Fourth National Exhibition of Textile Machinery and Mill Supplies, Booth No. 62, Main Floor, where we will explain and show our products in Heddles and Frames in all its details.

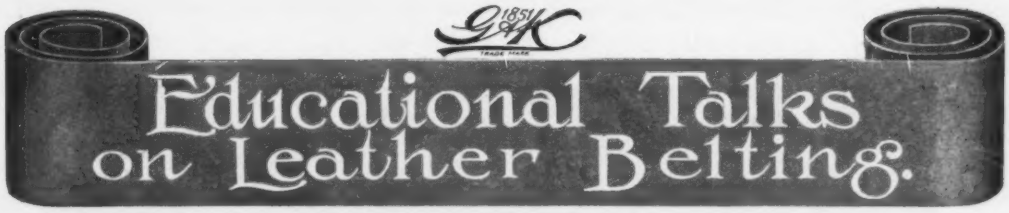
In the meantime send for samples. Better do this today, before you place another order for equipment.

Steel Heddle Manufacturing Company

First Makers of "Efficiency" Heddles and Frames

2100-2118 W. Allegheny Avenue Philadelphia, Pa.

Providence Office:—76 Dorrance St., Providence, R. I.



Proper Selection of Belting

The remarkable improvement in the manufacture of leather belting, made necessary by the development of modern efficient machinery, is of little avail if the proper selection and application of belting is neglected.

The use of unsuitable belting invariably results in increased expense due to one or more of the following objectionable features:— excessive or uneven stretching, slippage, undue friction in bearings, loss of power, frequent interruptions to machinery and consequent loss in production, to say nothing of the early destruction of the belting.

On the other hand the adoption of belting constructed to meet each condition of service, ensures low cost of operation and maintenance, as well as the maximum production from machinery.

There is one best belt for every drive.

For Vertical Drives — Belts of as light weight as is consistent with sufficient tensile strength to transmit the required power.

For Quarter Turn Drives — Belts of special construction, those for quarter turn to left made different from belts to operate on quarter turn to right.

For High Speed Work — Heavy single belts with special laps, or light double belts.

For Intermittant Loads — Heavy belts with high coefficient of friction.

For Exposure to Steam, Gas or Oils — G. & K. Spartan Belts made from leather specially tanned and curried and put together with a special cement.

For Exposure to Water or Moisture — G. & K. Neptune and Spartan Waterproof Belts put together with Waterproof Cement — the use of either Brand depends entirely upon the construction of the drive.

From the foregoing, the absurdity of adopting one quality and weight of belting for all drives is apparent.

To meet different conditions of service we manufacture several brands of belting each rigidly graded as to quality, weight and thickness.

Our engineering experts will gladly assist you in analyzing any type of drive or in the selection of belts calculated to render the greatest service. Consult us freely.

The Graton & Knight Mfg Co.

Oak Leather Tanners and Belt Makers

WORCESTER, MASS., U. S. A.

In an Age of Steel–
Steel is the Best Pulley Material

WHEREVER strength combined with lightness is desired, whether in the skeletons of skyscrapers or in watch springs, steel is used. These same qualities make steel the logical pulley material.

"American" Steel Split Pulleys

are probably more numerously used than any other make of metal pulley, and more than of all other steel pulleys combined.

Of the more than 2,000,000 "American" Pulleys shipped from our factory, less than two-tenths of one per cent have been reported as failing in service.

"American" Pulleys are light, strong and practically indestructible. They may be bushed down so as to take an immovable grip on various sizes of shaft.

Dealers Everywhere

THE AMERICAN PULLEY COMPANY
OFFICE AND WORKS: PHILADELPHIA, PA.

Write for
"FACTORS OF ENERGY"
a booklet containing tables, measurements, and notes of interest to the mill men.

Warehouses:
New York, cor. Grand and Greene Sts.
Boston, 165 Pearl St.
Chicago, 124 S. Clinton St.

Copyright 1914 American Pulley Co.

Perfect in Principle

Powerful in Performance

PATENTED

To the Textile Trade of the United States

We were always in favor of a low tariff—WHY?

BECAUSE

We knew that the Textile Industry was too firmly established and too well conducted to be hurt permanently—but we also knew that a good many mills would have to look after details more closely and in this we would profit by the *increased demand* for

SIZOL

TRADE-MARK

Our Soap Department is growing by leaps and bounds.

Our Sizing Department has made SIZOL the household word among Weavers and Finishers.

The reason for our success is that we know how to make the goods and serve the trade with whatever it needs.

THE SEYDEL MFG. COMPANY, 86-100 Forrest St., Jersey City, N. J.

When dirty oil drips on fabrics

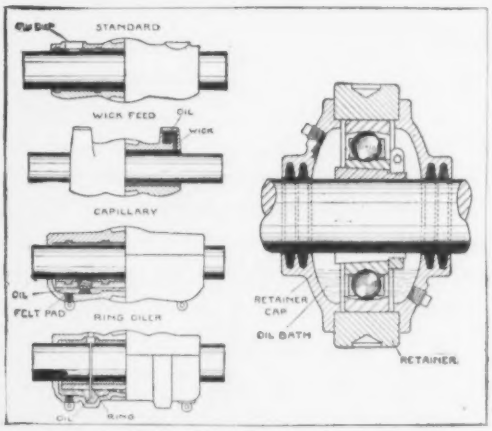


Fig. 2.—Comparing Shaft Journals to Show Perfect Lubrication and Oil Retention of Ball Bearing Box

NEW DEPARTURE

Frictionless

Ball Bearing Shaft Hangers

Retain oil, exclude dust and do not need large quantities of oil

Study these drawings carefully. The best of plain bearing boxes are shown. Do you see anything to prevent leakage of lubricant through the ends of the boxes? The rotation of the shaft helps to carry the oil out and this wasted lubricant drips from the ends of the hangers. Even when drip pans are provided they frequently overflow or work loose from their fastenings.

New Departure ball bearing shaft hangers are equipped with a box that is an oil retaining structure. The bearing revolves in a housing, only partially filled with lubricant. The shaft needs no lubrication. The balls are always oiled. The bearing housing closures have packing grooves that keep the oil from working out on the shaft.

This is only one advantage New Departure Ball Bearing Shaft Hangers offers particularly to the textile manufacturers. *This hanger will absolutely increase the efficiency of your power transmission system by reducing the friction load over fifty per cent.*

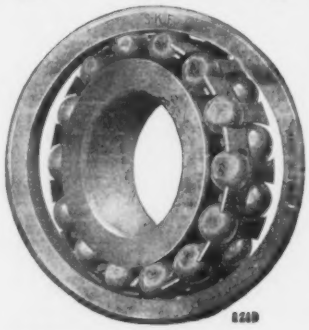
The New Departure Mfg. Co. Factory Equipment Dept. **Hartford, Conn.**

Will Your Pickers Handle 1800 lbs. per 10 Hours?

That depends largely on the bearings. Shoddy pickers mounted on plain bearings will handle about 1000 pounds of stock per ten hours. Shoddy pickers mounted on

SKF Self Aligning Ball Bearings

will handle 1800 pounds of stock in ten hours and will at the same time



Effect a saving in power of 65 per cent.

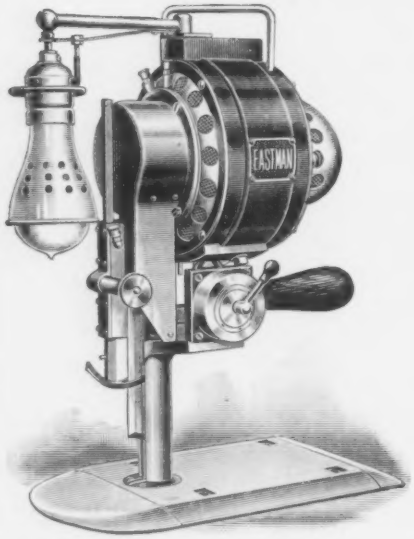
If a mill were running four pickers on plain journals it would be possible to *throw out one picker entirely* if the other three were mounted on S K F BALL SELF ALIGNING BEARINGS. This is due to the fact that S K F Ball Bearings run frictionless, rolling contact substituted for rubbing friction means less power consumption.

The great loss of power in textile mills is due to friction.

Self Alignment means the ability of the bearing to compensate for shaft deflection or spring in the machine frame.
Use S K F Ball Bearings and get more work out of your pickers.

SKF BALL BEARING CO.
50 Church Street, New York

WHEN YOU BUY



An

Eastman Cutter

Not only do you buy the best cutting device, but you buy a country wide service organization that stands ready to solve your cutting problems and straighten out any kicks that may arise.

Free trial for all styles

ROUND KNIVES ALTERNATING CURRENT
STRAIGHT KNIVES DIRECT CURRENT

The Eastman Machine Co.

BUFFALO, N. Y.

NEW YORK 316 Broadway | CHICAGO 815 W. Van Buren St. | PHILADELPHIA 110 N. Sixth Street | BALTIMORE 110 W. Fayette Street | DETROIT 73 State Street
KNOXVILLE, Tenn., 10 Central Market | SAN FRANCISCO, Cal., 682 Mission St. | BOSTON, 11 Edinboro St.

"ALTEMUS"

The last word in Winders for all classes of textile work

—SPECIAL—

Winder for Artificial Silk

from Skein to Bobbin

This Winder has been a SUCCESS for this class of work FROM THE BEGINNING for the plaiting of yarn due to the fact that WE KNOW HOW to build the machine for the difficult problems of its use; while to handle the yarn according to our instructions is a simple matter.

There is no other machine to do this class of Winding to give production or quality of work to equal the ALTEMUS

ESTABLISHED 1865

JACOB K. ALTEMUS

Textile Machinery

Machinery for
WINDING, WARPING,
SPOOLING, BEAMING,
and kindred use

2824 N. Fourth Street
Philadelphia, Pa.
U. S. A.

SMITH, DRUM & CO.

"BUILDERS OF THE BEST"

Labor Saving Machinery for Dyeing, Singeing and Finishing

HOSIERY

IN SULPHUR, ANILINE, DEVELOPED BLACKS AND COLORS
POWER SCREW PRESSES and MERCERIZING MACHINES

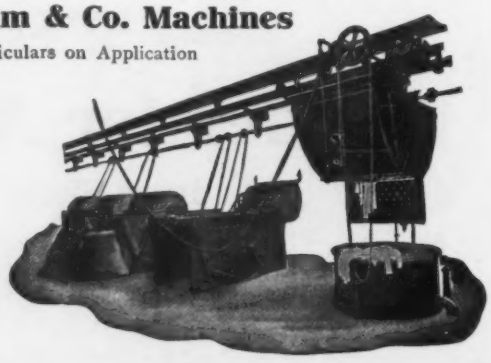
SAVE LABOR and **DYE STUFF** and do **BETTER WORK**
in your dye house by using

Smith, Drum & Co. Machines

Full Particulars on Application

Coral and
Cumberland Streets,
Philadelphia,
Pa.

Southern Agent
H. G. MAYER
Realty Bldg.,
CHARLOTTE, N. C.



LAWSON'S

Hope Foundry, LEEDS, England

BRANCH OF

Fairbairn Lawson Combe Barbour, Ltd.

MAKERS OF MACHINERY FOR

Preparing and Spinning

Flax, Hemp, Tow and Jute

Special Machinery
For the Manufacture of
Twines, Rope Yarns and Binder Twine

Good's Combined Hackling and Spreading Machines.

Long Reach Screw-Gill Drawing Frames. Chain-Gill Drawing Frames with Apron Heads.

Patent High-Speed Horizontal and Automatic Spinning Frames for Manila.

Improved Laying Machines.

Haskell-Dawes Tubing Twisters.

Brownell's Patent Twisting and Laying Machines for Twine.

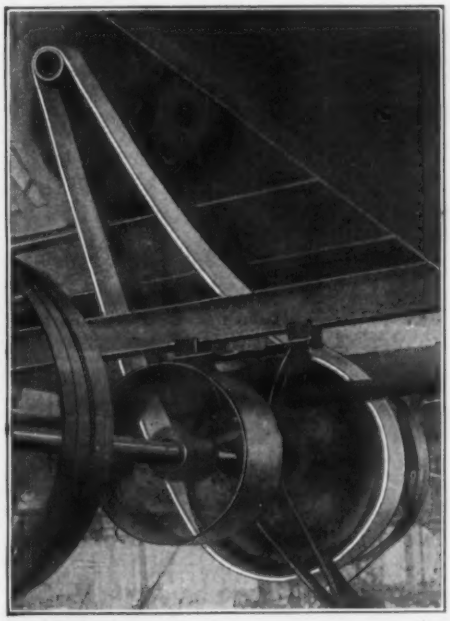
N. B.—Complete Plans and Estimates for Flax, Tow, Hemp and Jute Mills, Trawl Twine Factories and Steam Ropeworks.

REDUCE YOUR SERVICE COST

BY USING

Morse Flexible Gearing

This form of transmission is **Durable, Silent, Highly Efficient,** provides a **Positive** speed ratio and runs with a **Minimum** amount of care and attention.



The installation of the 100 H. P. **MORSE CHAIN DRIVE** shown above **EFFECTED A SAVING OF OVER 20%** in the power consumed to drive this card room over the double reduction belt drive that was previously used to connect the motor to the line shaft.

We now have in successful operation drives transmitting an aggregate of over 500,000 H. P. Individual drives running from 1 H. P. to 2000 H. P. each.

Let us figure on some of your power transmission problems.

Our Bulletin No. 9B is particularly interesting.

MORSE CHAIN CO.

ITHACA, N. Y.

N. E. Branch, 141 Milk St., Boston

Save the Stack from Corrosion!

Steel smokestacks require protection from the corrosion caused by acids, sulphurous and other gases of combustion, rust, etc. If this protection is not provided, they soon pit, rust, corrode and become weakened and worthless.

It pays to avoid all this trouble by lining the stack with

J-M Vitribestos Stack Lining

This lining, being made of the indestructible mineral Asbestos (vitrified), successfully withstands the attacks of acids, gases, excessive heat, rust, etc.

It is only one-tenth the weight of fire-brick. This means a less expensive foundation.

It is but 2 inches thick, while most linings are 5 inches thick, so gives greater flue area. On a six-foot diameter stack this increase in flue area, due to the use of J-M Vitribestos, amounts to 15 per cent., and as the efficiency of a stack varies according to its area, an increase here means greater efficiency and a better draft.

It will pay you to look into this matter by writing nearest Branch for our interesting booklet.

H. W. JOHNS-MANVILLE CO.

Albany	Detroit	New York
Baltimore	Indianapolis	Omaha
Boston	Kansas City	Philadelphia
Buffalo	Los Angeles	Pittsburgh
Chicago	Louisville	San Francisco
Cincinnati	Milwaukee	Seattle
Cleveland	Minneapolis	St. Louis
Dallas	New Orleans	Syracuse

1337

THE CANADIAN H. W. JOHNS-MANVILLE CO., LTD.
Toronto Montreal Winnipeg Vancouver

Starch

THE particular case of your own mill needs careful study to determine what starch is best suited to *your* SIZING and FINISHING problems.

We have reduced the manufacture of starches for textile work to a science by years of factory investigation and laboratory research. We are ready to take up the special case of your mill and point out to you what starches are most adaptable and reliable for your purposes.

Six years of careful investigation of conditions in the cotton mills of the country has taught us the needs of the trade.

Six years' research in the best equipped Starch Laboratory in America has put us in touch with starch chemistry.

Six years of manufacturing, with cotton mill problems in mind, has produced our special Brands of Textile Starches.

We want to send our special starch expert to your mill. We want him to go into the matter of sizing with your boss of slashing—check up your sizing processes—find out whether you are now using the starches that will insure you the most efficient and economical results.

This special starch expert service is absolutely free—send us a sample of the starches you are using. We will give you an exact analysis of them and send our practical man to study your needs. Write a letter now to our Mill Starch Department.

Corn Products Refining Company
NEW YORK

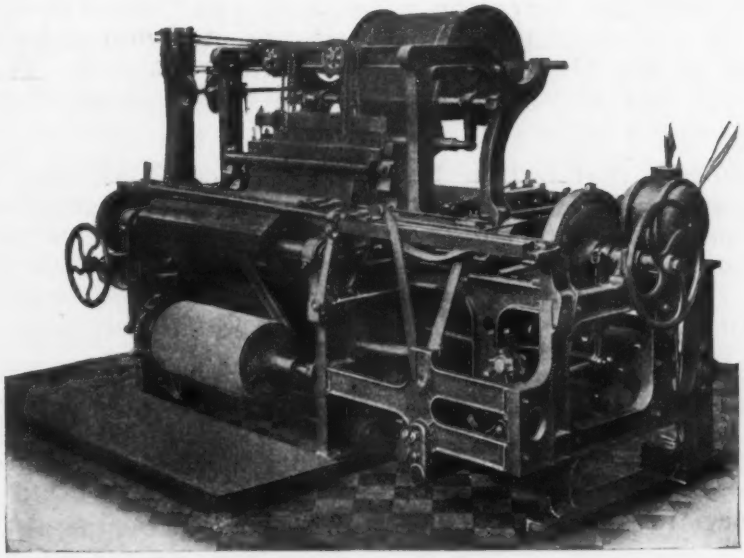
Starch

Saechsische Webstuhlfabrik

(LOUIS SCHOENHERR)

Chemnitz, Germany

CARPET LOOMS



Sole Representative in the U. S. A. and Canada

A. W. BUHLMANN

Textile Engineer

200 Fifth Avenue - NEW YORK

A SATISFIED USER

IS THE BEST ADVERTISEMENT

If we will prove to you that we can actually cut down your operating costs and increase your output in one operation will you at least look into our proposition?

And that is exactly what we CAN do.

We will take the cotton harness off your looms and in its place we will put harness of everlasting steel and make it last as long as ten sets of the old style cotton harness We can show you any number of mills that wouldn't think of going back to cotton harness now.

Not only that, but the Duplex Steel Heddle will last easily ten times as long, to say nothing of the time saved in changing and "petling" it on the loom. It is child's play to transfer Duplex Heddles off and on to suit the thread per inch in the warp. Your breakage will be decreased and you will get a corresponding increase in the amount of your production. Nor does every new sley and weave mean new harness.

We can tell you a hundred other reasons why you ought to equip with the Duplex Heddle—but it would read too much like a dream. You probably never believed such a heddle could be made—but it only goes to show what intense concentration and specialization by trained mill men will do.

See us at the Fourth National Exhibition of Textile Machinery and Mill Supplies, Booth No. 62, Main Floor, where we will explain and show our products in Heddles and Frames in all its details.

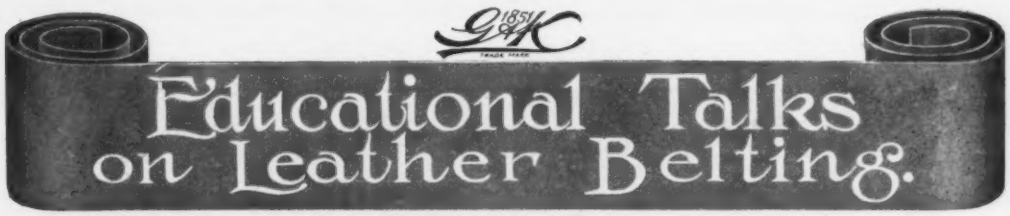
In the meantime send for samples. Better do this today, before you place another order for equipment.

Steel Heddle Manufacturing Company

First Makers of "Efficiency" Heddles and Frames

2100-2118 W. Allegheny Avenue Philadelphia, Pa.

Providence Office:—76 Dorrance St., Providence, R. I.



Proper Selection of Belting

The remarkable improvement in the manufacture of leather belting, made necessary by the development of modern efficient machinery, is of little avail if the proper selection and application of belting is neglected.

The use of unsuitable belting invariably results in increased expense due to one or more of the following objectionable features:— excessive or uneven stretching, slippage, undue friction in bearings, loss of power, frequent interruptions to machinery and consequent loss in production, to say nothing of the early destruction of the belting.

On the other hand the adoption of belting constructed to meet each condition of service, ensures low cost of operation and maintenance, as well as the maximum production from machinery.

There is one best belt for every drive.

For Vertical Drives — Belts of as light weight as is consistent with sufficient tensile strength to transmit the required power.

For Quarter Turn Drives — Belts of special construction, those for quarter turn to left made different from belts to operate on quarter turn to right.

For High Speed Work — Heavy single belts with special laps, or light double belts.

For Intermittant Loads — Heavy belts with high coefficient of friction.

For Exposure to Steam, Gas or Oils — G. & K. Spartan Belts made from leather specially tanned and curried and put together with a special cement.

For Exposure to Water or Moisture — G. & K. Neptune and Spartan Waterproof Belts put together with Waterproof Cement — the use of either Brand depends entirely upon the construction of the drive.

From the foregoing, the absurdity of adopting one quality and weight of belting for all drives is apparent.

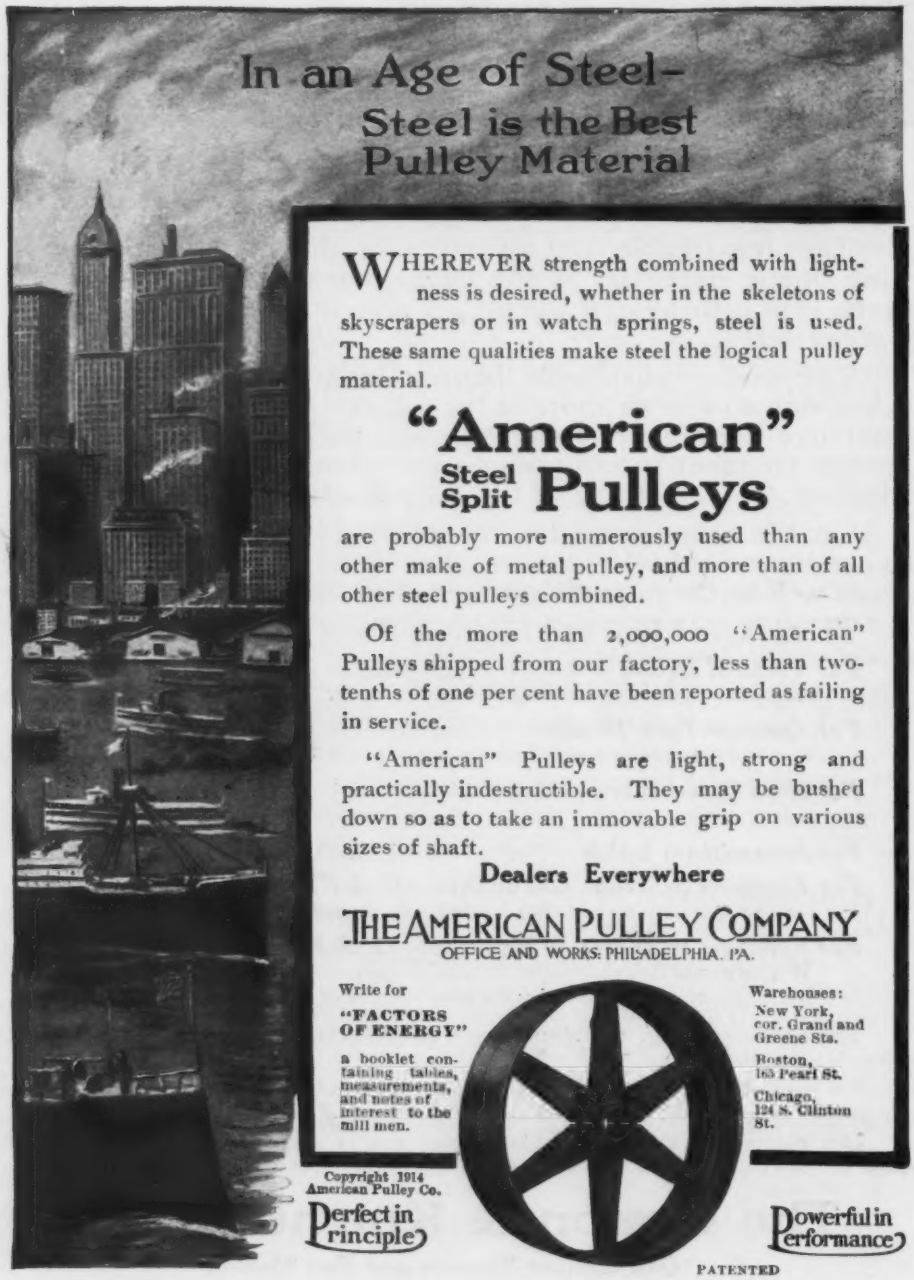
To meet different conditions of service we manufacture several brands of belting each rigidly graded as to quality, weight and thickness.

Our engineering experts will gladly assist you in analyzing any type of drive or in the selection of belts calculated to render the greatest service. Consult us freely.

The Graton & Knight Mfg Co.

Oak Leather Tanners and Belt Makers

WORCESTER, MASS., U. S. A.



In an Age of Steel—
Steel is the Best Pulley Material

WHEREVER strength combined with lightness is desired, whether in the skeletons of skyscrapers or in watch springs, steel is used. These same qualities make steel the logical pulley material.

"American" Steel Split Pulleys

are probably more numerously used than any other make of metal pulley, and more than of all other steel pulleys combined.

Of the more than 2,000,000 "American" Pulleys shipped from our factory, less than two-tenths of one per cent have been reported as failing in service.

"American" Pulleys are light, strong and practically indestructible. They may be bushed down so as to take an immovable grip on various sizes of shaft.

Dealers Everywhere

THE AMERICAN PULLEY COMPANY
OFFICE AND WORKS: PHILADELPHIA, PA.

Write for **"FACTORS OF ENERGY"** a booklet containing tables, measurements, and notes of interest to the mill men.

Warehouses:
New York, cor. Grand and Greene Sts.
Boston, 165 Pearl St.
Chicago, 124 S. Clinton St.

Copyright 1914 American Pulley Co.

Perfect in Principle

Powerful in Performance

PATENTED

To the Textile Trade of the United States

We were always in favor of a low tariff—WHY?

BECAUSE

We knew that the Textile Industry was too firmly established and too well conducted to be hurt permanently—but we also knew that a good many mills would have to look after details more closely and in this we would profit by the *increased demand* for

SIZOL TRADE-MARK

Our Soap Department is growing by leaps and bounds.

Our Sizing Department has made SIZOL the household word among Weavers and Finishers.

The reason for our success is that we know how to make the goods and serve the trade with whatever it needs.

THE SEYDEL MFG. COMPANY, 86-100 Forrest St., Jersey City, N. J.

When dirty oil drips on fabrics

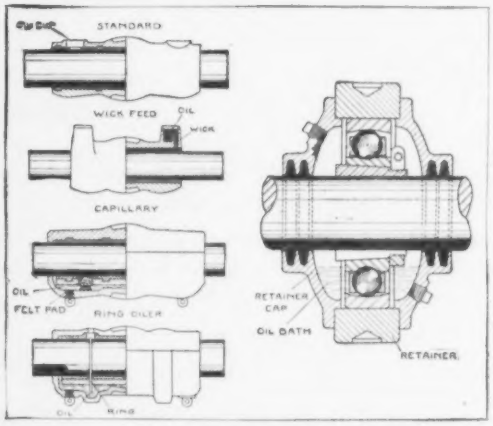


Fig. 2.—Comparing Shaft Journals to Show Perfect Lubrication and Oil Retention of Ball Bearing Box

NEW DEPARTURE

Frictionless

Ball Bearing Shaft Hangers

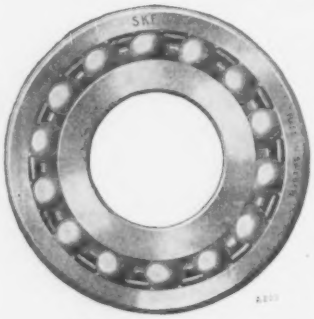
Retain oil, exclude dust and do not need large quantities of oil

Study these drawings carefully. The best of plain bearing boxes are shown. Do you see anything to prevent leakage of lubricant through the ends of the boxes? The rotation of the shaft helps to carry the oil out and this wasted lubricant drips from the ends of the hangers. Even when drip pans are provided they frequently overflow or work loose from their fastenings.

New Departure ball bearing shaft hangers are equipped with a box that is an oil retaining structure. The bearing revolves in a housing, only partially filled with lubricant. The shaft needs no lubrication. The balls are always oiled. The bearing housing closures have packing grooves that keep the oil from working out on the shaft.

This is only one advantage New Departure Ball Bearing Shaft Hangers offers particularly to the textile manufacturers. *This hanger will absolutely increase the efficiency of your power transmission system by reducing the friction load over fifty per cent.*

The New Departure Mfg. Co. Factory Equipment Dept. **Hartford, Conn.**

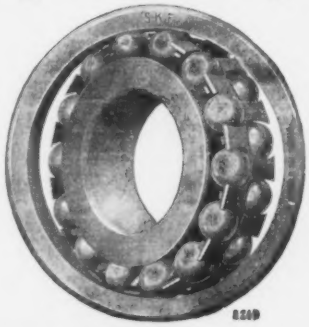


Will Your Pickers Handle 1800 lbs. per 10 Hours?

That depends largely on the bearings. Shoddy pickers mounted on plain bearings will handle about 1000 pounds of stock per ten hours. Shoddy pickers mounted on

SKF Self Aligning Ball Bearings

will handle 1800 pounds of stock in ten hours and will at the same time



Effect a saving in power of 65 per cent.

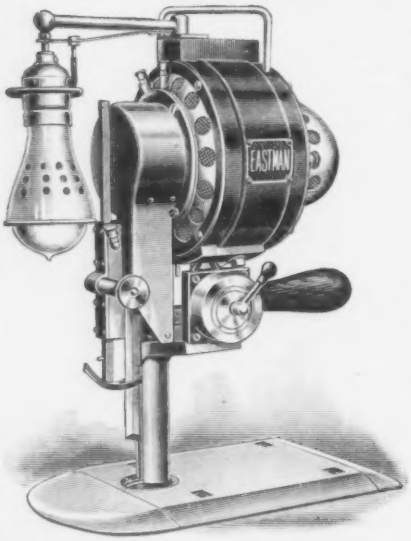
If a mill were running four pickers on plain journals it would be possible to *throw out one picker entirely* if the other three were mounted on S K F BALL SELF ALIGNING BEARINGS. This is due to the fact that S K F Ball Bearings run frictionless, rolling contact substituted for rubbing friction means less power consumption.

The great loss of power in textile mills is due to friction.

Self Alignment means the ability of the bearing to compensate for shaft deflection or spring in the machine frame.
Use S K F Ball Bearings and get more work out of your pickers.

SKF BALL BEARING CO.
50 Church Street, New York

WHEN YOU BUY



An

Eastman Cutter

Not only do you buy the best cutting device, but you buy a country wide service organization that stands ready to solve your cutting problems and straighten out any kicks that may arise.

Free trial for all styles

ROUND KNIVES ALTERNATING CURRENT
STRAIGHT KNIVES DIRECT CURRENT

The Eastman Machine Co.

BUFFALO, N. Y.

NEW YORK 816 Broadway | CHICAGO 815 W. Van Buren St. | PHILADELPHIA 110 N. Sixth Street | BALTIMORE 110 W. Fayette Street | DETROIT 73 State Street
KNOXVILLE, Tenn., 10 Central Market | SAN FRANCISCO, Cal., 682 Mission St. | BOSTON, 11 Edinboro St.

"ALTEMUS"

The last word in Winders for all classes of textile work

—SPECIAL—

Winder for Artificial Silk

from Skein to Bobbin

This Winder has been a SUCCESS for this class of work FROM THE BEGINNING for the plaiting of yarn due to the fact that WE KNOW HOW to build the machine for the difficult problems of its use; while to handle the yarn according to our instructions is a simple matter.

There is no other machine to do this class of Winding to give production or quality of work to equal the ALTEMUS

ESTABLISHED 1865

JACOB K. ALTEMUS

Textile Machinery

Machinery for
WINDING, WARPING,
SPOOLING, BEAMING,
and kindred use

2824 N. Fourth Street
Philadelphia, Pa.
U. S. A.

SMITH, DRUM & CO.

"BUILDERS OF THE BEST"

Labor Saving Machinery for Dyeing, Singeing and Finishing

HOSIERY

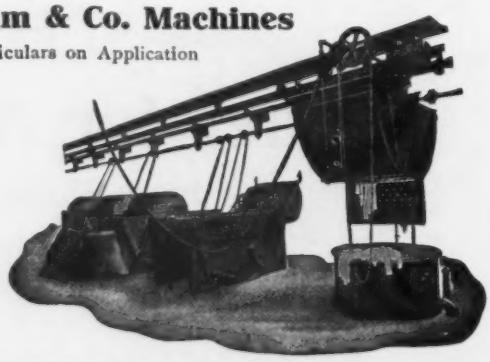
IN SULPHUR, ANILINE, DEVELOPED BLACKS AND COLORS
POWER SCREW PRESSES and MERCERIZING MACHINES

SAVE LABOR and **DYE STUFF** and do **BETTER WORK**
in your dye house by using

Smith, Drum & Co. Machines

Full Particulars on Application

Coral and
Cumberland Streets,
Philadelphia,
Pa.



Southern Agent
H. G. MAYER
Realty Bldg.,
CHARLOTTE, N. C.

LAWSON'S

Hope Foundry, LEEDS, England

BRANCH OF

Fairbairn Lawson Combe Barbour, Ltd.

MAKERS OF MACHINERY FOR

Preparing and Spinning

Flax, Hemp, Tow and Jute

Special Machinery
For the Manufacture of
Twines, Rope Yarns and Binder Twine

Good's Combined Hackling and Spreading Machines.

Long Reach Screw-Gill Drawing Frames. Chain-Gill Drawing Frames with Apron Heads.

Patent High-Speed Horizontal and Automatic Spinning Frames for Manila.

Improved Laying Machines.

Haskell-Dawes Tubing Twisters.

Brownell's Patent Twisting and Laying Machines for Twine.

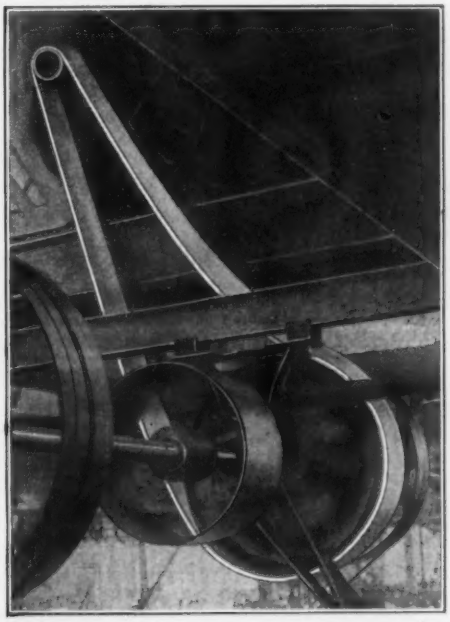
N. B.—Complete Plans and Estimates for Flax, Tow, Hemp and Jute Mills, Trawl Twine Factories and Steam Ropeworks.

REDUCE YOUR SERVICE COST

BY USING

Morse Flexible Gearing

This form of transmission is **Durable, Silent, Highly Efficient,** provides a **Positive** speed ratio and runs with a **Minimum** amount of care and attention.



The installation of the 100 H. P. **MORSE CHAIN DRIVE** shown above **EFFECTED A SAVING OF OVER 20%** in the power consumed to drive this card room over the double reduction belt drive that was previously used to connect the motor to the line shaft.

We now have in successful operation drives transmitting an aggregate of over 500,000 H. P. Individual drives running from 1 H. P. to 2000 H. P. each.

Let us figure on some of your power transmission problems.

Our Bulletin No. 9B is particularly interesting.

MORSE CHAIN CO.

ITHACA, N. Y.

N. E. Branch, 141 Milk St., Boston

Save the Stack from Corrosion!

Steel smokestacks require protection from the corrosion caused by acids, sulphurous and other gases of combustion, rust, etc. If this protection is not provided, they soon pit, rust, corrode and become weakened and worthless.

It pays to avoid all this trouble by lining the stack with

J-M Vitribestos Stack Lining

This lining, being made of the indestructible mineral Asbestos (vitrified), successfully withstands the attacks of acids, gases, excessive heat, rust, etc.

It is only one-tenth the weight of fire-brick. This means a less expensive foundation.

It is but 2 inches thick, while most linings are 5 inches thick, so gives greater flue area. On a six-foot diameter stack this increase in flue area, due to the use of J-M Vitribestos, amounts to 15 per cent., and as the efficiency of a stack varies according to its area, an increase here means greater efficiency and a better draft.

It will pay you to look into this matter by writing nearest Branch for our interesting booklet.

H. W. JOHNS-MANVILLE CO.

Albany	Detroit	New York
Baltimore	Indianapolis	Omaha
Boston	Kansas City	Philadelphia
Buffalo	Los Angeles	Pittsburgh
Chicago	Louisville	San Francisco
Cincinnati	Milwaukee	Seattle
Cleveland	Minneapolis	St. Louis
Dallas	New Orleans	Syracuse

1337

THE CANADIAN H. W. JOHNS-MANVILLE CO., LTD.
Toronto Montreal Winnipeg Vancouver

HE CAN DO IT ALONE

YOU wouldn't expect a man to stack a 500 to a 2000 lb. case up near the ceiling in your warehouse unaided, but if he had a Revolvator he could do it alone.

One man can easily elevate loads weighing 2000 lbs., adjust the height of the platform to a nicety, turn the Revolvator around so that it can be unloaded from any direction and shove the case into place. This extreme flexibility is made possible by the unique revolving base.

If you have any kind of bulk material, such as cases, bales, barrels, etc., to store, investigate the **REVOLVATOR** method. It increases the capacity of store rooms and frequently halves the labor bill.

How this is made possible is fully described in our catalog TW 18, "Scientific Tiering." Ask for a copy.

New York Revolving Portable Elevator Co.

349 Garfield Ave., Jersey City, N. J.

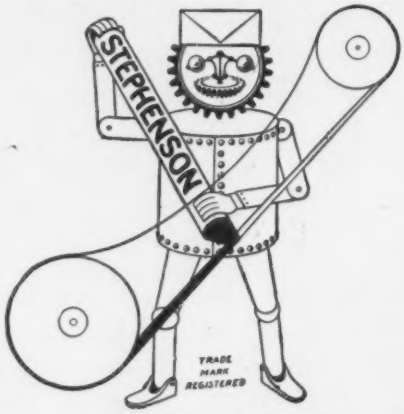
45

STEPHENSON

Bar Belt Dressing Prevents

Waste of Power and Fuel

Because it stops the belt from slipping and causes it to transmit all the Power without being made so tight as to cause unnecessary friction.



This Registered Trademark Is Your Protection

It appears on each stick of Genuine Stephenson Bar Belt Dressing—the dressing that has held to its uniform quality for 23 years.

This belt dressing surpasses liquid preparations, for there is absolutely no waste in applying it to the belt, and it is put up in sticks or solid form, so that it can be carried about in the tool-box. For these reasons—

1 Pound Lasts as Long as 2 Pounds of Any Liquid or Semi-Liquid Dressing.

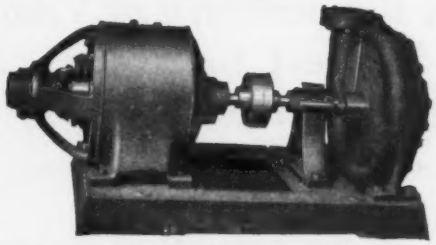
There are two brands, Red Label for leather belts, Green Label for rubber, canvas, or balata belts.

Prices, literature and sample sent to any mill on request.

Stephenson Mfg. Co.

Main Office and Works,
Albany, N. Y.

For Pumping Size and General Water Supply



Gould's Centrifugals are adapted for every pumping service in the textile mill.

They are the simplest type of pump made; and for a given capacity their first cost and the space required is smaller than for any other type of pump.

These pumps can be furnished with pulleys for belt drive or for direct connection to any type of driver.

Bulletins will be sent on request.

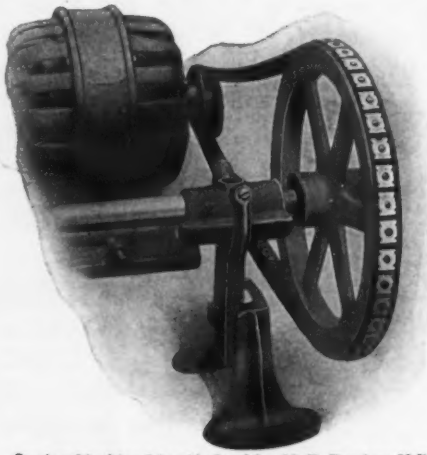
THE GOULDS MFG. CO.

LARGEST MFR. OF PUMPS FOR EVERY SERVICE

62 W. FALL STREET - SENECA FALLS, N. Y.

Branches and Agencies in Principal Cities

Peerless V Silent Chain Drives



Sewing Machine Line Shaft with 2 H. P. Peerless V Belt

Are absolutely noiseless in operation. Can be operated on very close centers. Are not in any way effected by moisture, dust, grit or lint. And owing to the principle of the wedge being fully utilized, slippage is avoided, making a positive drive.

If you are bothered with transmission troubles send for full information and let us solve them for you.

PEERLESS V BELT CO.

NEW YORK CEDAR RAPIDS, IA. CHICAGO

This Publication is of Vital Interest to Every Textile Man

Because it tells him how he can increase production without increasing costs.

It forms the best obtainable exposition of the motor drive of textile machinery—the reasons for installing motors, the various methods of drive, and the results obtained.

The following numbers have been published:

1. **Motor Drive in Cotton Spinning Mills**
2. **Motor Drive for Worsted and Woolen Looms**
3. **Motor Drive in Knitting Mills**
4. **Motor Drive in the Silk Industry**
5. **Electrically Driven Pickers**
6. **The Illumination of Textile Mills**

SEND FOR THE NUMBERS THAT INTEREST YOU

Westinghouse Electric & Mfg. Co. EAST PITTSBURGH, PA.

Boston Office: Safe Deposit & Trust Co. Charlotte Office: American Building Sales Offices in 45 American Cities

Member Society for Electrical Development "Do it Electrically"

A NEW METHOD for both Straight Cutting and Pinking Samples

Fig. 639

at a great economy of time and cloth is possible on the NEW OSWEGO AUTOS, equipped with back gauge size duplicating attachment and any length of iron back table desired, and other equipment especially adapted to each case for the most rapid production. The instant adoption of the OSWEGO Cutters by many progressive American firms indicates their success on all kinds of textiles, etc.

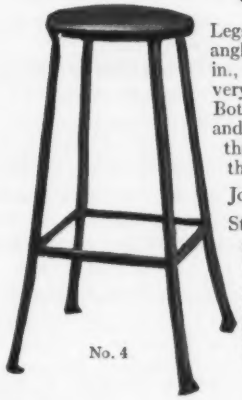
Thirty-five stock sizes and styles, from 19 in. to 84 in. (larger sizes to order), enable you to select any size or style or price OSWEGO you desire. Each OSWEGO Cutter is guaranteed and the best producible.

Oswego Machine Works

NIEL GRAY, JR., Proprietor **Oswego, N. Y.**

The Angle Steel Stool

ALL STEEL! (with Steel Seat)



No. 4

Construction

Legs—high carbon angle steel, ¾x¾x¼ in., making them very rigid and strong. Bottom of legs strong and smooth, allowing them to set level on the floor.

Joints—Riveted.

Stretchers—Flat steel, ¾ by 3/16 inch.

Seat—Pressed Steel, highly finished enamel, 12 in. diameter.

Net Prices

Height	Per Dozen
20 inches	$11.00
22 inches	11.50
24 inches	12.00
26 inches	12.50
28 inches	13.00
30 inches	13.50

No. 4 with back is our No. 44. Add $4.00 per dozen to price quoted above.

We also make chairs and three legged stools.

WE MAKE STOOLS TO ANY HEIGHT YOU MAY DESIRE.

STEEL STOOL WITH SPRING STEEL BACK

This is Our Improved Modern Stool

Made with high carbon angle steel legs. It has a **13-inch hardwood seat,** mahogany stained, and the entire framework is nicely finished in dark green enamel. The backs are double braced and adjustable, with a simple motion they can be raised from 10 to 16 inches.

Frame construction same as No. 4.

No. 11

Net Prices

Height	Per Dozen
20 inches	$16.00
22 inches	16.50
24 inches	17.00
26 inches	17.50
28 inches	18.00
30 inches	18.50

No. 11 without back is our No. 1. Deduct $4.00 per dozen from price quoted above.

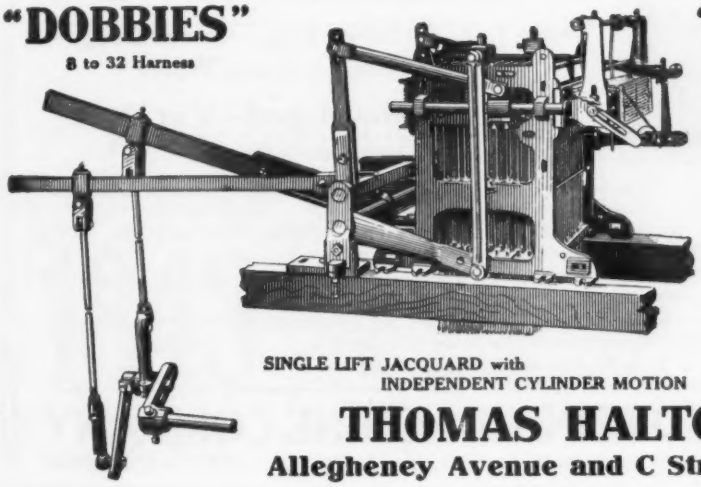
Do you need tool trucks, racks or merchandise conveyors?

Send for Catalogue No. 114.

Angle Steel Stool Co., Inc., Otsego, Mich.

"DOBBIES"

8 to 32 Harness



"JACQUARDS"

208 to 2608 Hooks

ALL TYPES

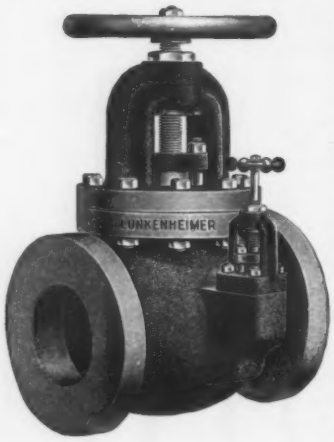
HARNESS BUILDING

SINGLE LIFT JACQUARD with INDEPENDENT CYLINDER MOTION

THOMAS HALTON'S SONS

Allegheny Avenue and C Street, Philadelphia

LUNKENHEIMER IRON BODY VALVES



All parts of these valves subjected to wear are renewable and are made of a high grade bronze composition containing a large percentage of copper and tin. The iron used is hard and close-grained and has a tensile strength of 25,000 pounds per square inch.

Made in **Medium, Heavy** and **Extra Heavy Patterns,** guaranteed for working pressures up to 125, 175 and 250 pounds per square inch respectively.

The line consists of Globe, Angle, Cross, Check, Gate, Pop Safety, Relief, Blow-off, Non-return Safety Boiler Stop Valves, etc. This line is also made in **"Puddled" Semi-Steel,** suitable for superheated steam and severe service, and in **Cast Steel** intended for extreme conditions of pressure, superheat and service.

Specify and insist upon securing the genuine **Lunkenheimer make.** Do not accept substitutes,—they are never as good as the genuine. Your local dealer can furnish them, if not; write us. *Write for Catalogue.*

THE LUNKENHEIMER CO.
"QUALITY"

Executive Offices and Factories, CINCINNATI, OHIO, U .S. A.

NEW YORK 64-68 Fulton Street | CHICAGO 188 N. Dearborn St | BOSTON 138 High St. | LONDON, S. E. 38 Great Dover St.

Economical Cotton Dyeing and Bleaching

In the Psarski Dyeing Machine

SAVES FIBRE

Saves Labor—Saves Dyes—Saves Drugs—Saves Steam—Saves Water

Sulphur—Developed—Vat Dyes
Done Equally Well

Raw Stock Dyeing—The cotton goes to cards in as good condition as directly from bales. Is not rolled into balls and strings.

Bleaching—Bleached and Washed PERFECTLY CLEAN—FREE FROM CHLORIN OR ACID. 3½ hours to batch. Is not pounded and twisted into practically waste.

Skein Dyeing—No Boiling Out—No Tangles—Yarns are left Smooth and in perfect condition for winding, knitting, etc.

Hosiery—Recommended size of machine does 300 pounds to batch, SULPHUR OR DEVELOPED BLACKS. It is not Roughed—No Singeing required—No Sorting—No damaged.

15 to 20 per cent Saving in Drugs

THE PSARSKI DYEING MACHINE COMPANY

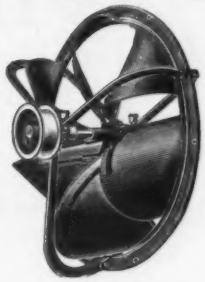
3167 Fulton Road :: :: :: :: CLEVELAND, OHIO

The Berry Wheel
Saves $ $ $ From The Fog

The dollar now lost in the Dye House fogs can be saved—You can stop this big leak in profits and decreased efficiency of employees if you clear the atmosphere with a BERRY FAN.

Why Not Save Those Wasted Dollars?

For Drying and Ventilating Facts, Write To
A. HUN BERRY, 29-33 West First St., Boston



This is the
BERRY WHEEL OR FAN
the most effective agent on the market for drying and for eliminating steam and other impurities in the air.

Hunt-McCormick and Francis Turbines
Penstock, Head Gate Apparatus

National Standard Type "B" Rotary Fire Pumps

TEXTILE MACHINERY
For finishing Woolens and Felts

Rodney Hunt Machine Company
Works and Main Office
Orange, Mass.

Boston Office
70 Kilby Street

The
Pleasant Business Associations
Formed in the years that are passed
1843 Lead us to wish for all **1914**
A Prosperous
Year to Come

THE AMERICAN TOOL AND MACHINE CO.
Incorporated 1864 BOSTON

WILLIAM FIRTH

558-559 John Hancock Building, 200 Devonshire Street, Boston, Mass.

SOLE IMPORTER OF

ASA LEES & CO., Limited

TEXTILE MACHINERY

OF EVERY DESCRIPTION FOR COTTON, WOOLEN AND WORSTED.

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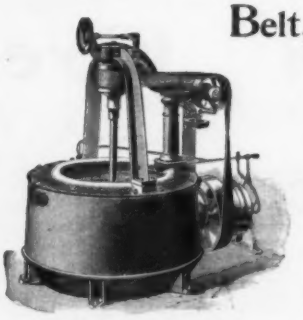

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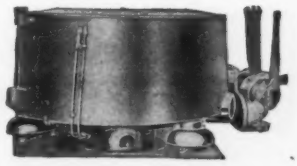

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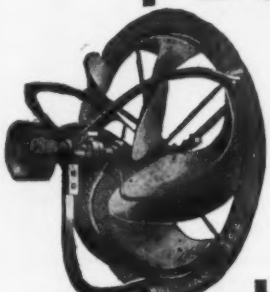

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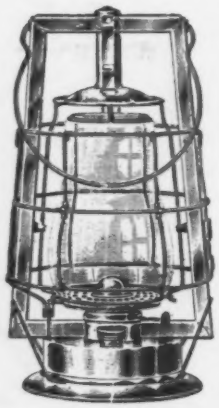

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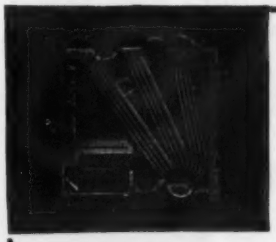

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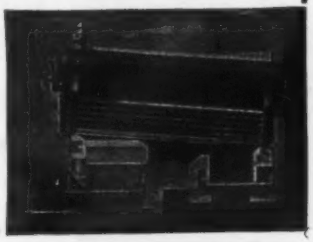

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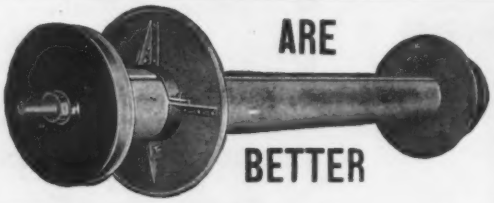

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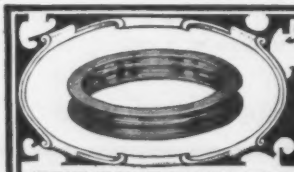

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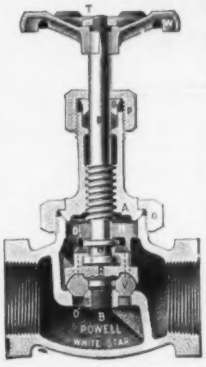

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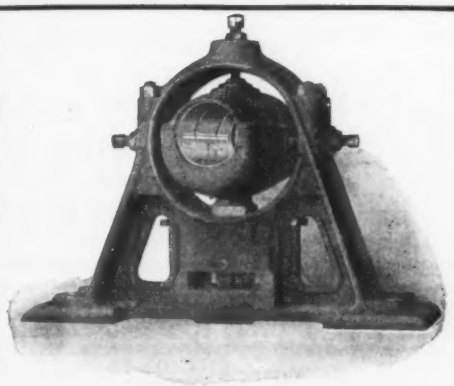

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The end is not yet, but already

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TEXTILE WORLD RECORD

Published on the 12th of each month by

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Produces the permanent white that does not turn yellow when goods are brought in contact with hot dry cans or when boxed up for long periods.

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247 ATLANTIC AVENUE
BOSTON, MASS.

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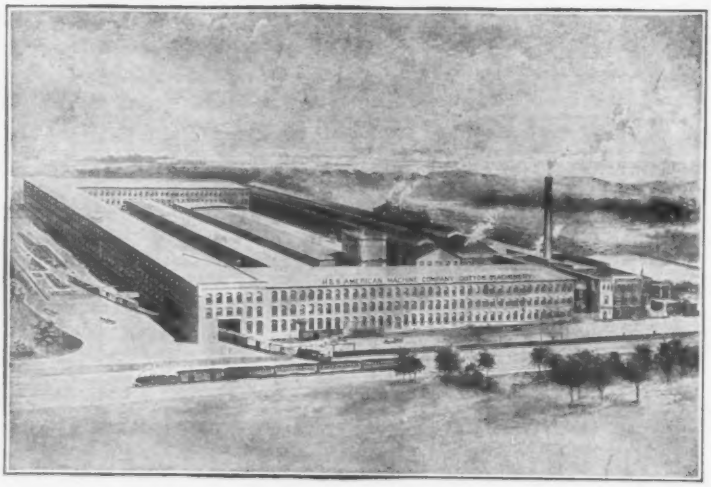
Correspondence

We solicit correspondence on textile subjects. Articles accepted will be paid for. Name and address must always be given, not necessarily for publication. Subscribers are invited to make free use of our Questions and Answers Department; correspondence is strictly confidential.

COTTON MACHINERY



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TEXTILE WORLD RECORD

JANUARY, 1914

Monthly Comment.

Wool and Wool Goods Tariffs for 124 Years

The Underwood tariff of 35 per cent. ad valorem on wool goods became effective on January 1, 1914, wool and wool by-products having been placed on the free list a month earlier, on December 1, 1913. These radical changes in the protection to the wool manufacturing industry give special interest to the following summary of the different American tariffs on wool and wool goods since 1789 when the first tariff act went into effect. In making this list the rates on only the principal products, raw and manufactured, are given, as the details would have made the exhibit too complicated. For example, the rates given for wool since 1867 are only those on so-called clothing wool. The specific duties are based on the pound unless otherwise stated:

	Wool	Wool Goods
1789	Free	5%
1790	Free	5
1792	Free	7½
1794	Free	10
1797	Free	10
1800	Free	12½
1804	Free	15
1812	Free	25
1816	15%	25

1824. Wool: 15% under 10c., 20% over 10c. first year, 25% over 10c. second year, 30% over 10c. after second year. Wool Goods: 25% not over 33 1/3c. per sq. yd., 30% over 33 1/3c. until 1825, 33 1/3% over 33 1/3c. after 1825.

1828. Wool: 4c. and 40% first year, 4c. and 45% second year, 4c. and 50% after second year. Wool Goods: 14c. sq. yd. not over 33 1/3c. per sq. yd., 20c. sq. yd. over 33 1/3c. and not over 50c. sq. yd., 40c. sq. yd. over 50c. and not over $1.00 sq. yd., $1.00 sq. yd. over $1.00 and not over $2.50 sq. yd., $1.60 sq. yd. over $2.50 and not over $4.00 sq. yd. One-eighth added to last four rates after first year.

1832. Wool: Free not over 8c., 4c. and 40% above 8c. Wool Goods: 5% on cloths not over 35c. per sq. yd., 50% above 35c. per sq. yd.

1833. Wool: Free. Wool Goods: Free worsted stuff goods. Fulled cloths 50%. Excess over 20% to be reduced annually until 20% is reached in 1842.

1841. Wool: Free not over 8c, 20% over 8c. Wool Goods: 20%.

1842. Wool: 5% not over 7c., 3c. and 30% over 7c. Wool Goods: 40%.

1846. Wool: 30%. Wool Goods: 30%.

1857. Wool: Free not over 20c., 24% over 20c. Wool Goods: 24%.

1861. Wool: 5% not over 18c., 3c. over 18c. and not over 24c., 9c. over 24c. Wool Goods: 12c. and 25%.

1862. Wool: 5% not over 18c., 3c. over 18c. and not over 24c., 9c. over 24c. Wool Goods: 18c. and 30% not over $1.00 or not less than 12 ozs. per sq. yd., 18c. and 35% over $1.00 or less than 12 ozs. per sq. yd.

1864. Wool: 3c. not over 12c., 6c. over 12c. and not over 24c., 10c. and 10% over 24c. and not over 32c., 12c. and 10% over 32c. Wool Goods: 24c. and 40% not over $2.00 per sq. yd., 24c. and 45% over $2.00 per sq. yd.

1867. 10c. and 11% not over 32c., 12c. and 10% over 32c. Wool Goods: 20c. and 35% not over 40c., 30c. and 35% over 40c. and not over 60c., 40c. and 35% over 60c. and not over 80c., 50c. and 35% over 80c.

1872. Wool: 9c. and 9 9/10% not over 32c., 10 8/10c. and 9% over 32c. Wool Goods: 18c. and 31 1/2% not over 40c., 27c. and 31 1/2% over 40c. and not over 60c., 36c. and 31 1/2% over 60c. and not over 80c., 45c. and 31 1/2% over 80c.

1875. Wool: 10c. and 11% not over 32c., 12c. and 10% over 32c. Wool Goods: 20c. and 35% not over 40c., 30c. and 35% over 40c. and not over 60c., 40c. and 35% over 60c. and not over 80c., 50c. and 35% over 80c.

1883. Wool: 10c. not over 30c., 12c. over 30c. Wool Goods: 10c. and 35% not over 30c., 12c. and 35% over 30c. and not over 40c., 18c. and 35% over 40c. and not over 60c., 24c. and 35% over 60c. and not over 80c., 35c. and 40% over 80c.

1890. Wool: 11c. Wool Goods: 33c. and 40% not over 30c., 38 1/2c. and 40% over 30c. and not over 40c., 44c. and 50% over 40c.

1894. Wool: Free. Wool Goods: 40% not over 50c., 50% over 50c.

1897. Wool: 11c. Wool Goods: 33c. and 50% not over 40c., 44c. and 50% over 40c. and not over 70c., 44c. and 55% over 70c.

1909. Wool: 11c. Wool Goods: 33c. and 50% not over 40c., 44c. and 50% over 40c. and not over 70c., 44c. and 55% over 70c.

1913. Wool: Free. Wool Goods: 35 per cent.

This bird's eye view of the wool and wool goods tariff for a century and a quarter brings very distinctly to mind the many ups and downs of that football of American politics, schedule K. For sixteen years, from 1897 to 1913, this schedule remained undisturbed by legislative action, although during that time the object of widespread agitation for its revision. During the remaining one hundred and eight years, from 1789 to 1897, it had no rest, but was in a continuous state of flux that brought in its train a bewildering succession of specifics, ad valorems, free list, and sliding scales of annual increases and decreases for both raw wool and wool goods. Before the industry could become adjusted to a new tariff another revision would mark the beginning of a new period of readjustment. The need of the wool manufacturing industry, made evident by this review of woolen tariffs since 1789, has been and is a settled policy of moderate and adequate protection, and a readiness to revise up or down at any time in accordance with such policy. With the wool goods tariff of 1913 in effect only two weeks, it is already evident from the foreign goods offered for sale, and to which reference is made in this issue, that the rate on goods is too low for safety to the American industry. The remedy for such difficulty is not to be found in a sudden swing of the political pendulum to the opposite extreme, but in a calm, businesslike and unprejudiced study of conditions and a prompt application of the remedy in the form of revision by paragraphs, sentences or words to place the industry on a safe basis. Both political parties can cooperate in this work of sane revision, because both are protectionist in practice. The only difference between them is that a portion of one party thinks it is for free trade. But no party is for free trade that, without a dissenting voice from Congress or the White House, enacted the tariff law of 1913, which placed carefully graduated protective rates on mohair, and mohair tops, yarn and piece goods.

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International Short Time

A number of influences have combined to bring about short time in European cotton mills. They include the financial stringency, the Balkan wars, and a production of goods in excess of the normal demand, the last-named condition being the direct result of overtime and building too many mills. The cotton mills of South Germany, Alsace, Austria, Belgium and Italy have been operating on a short time schedule for several weeks, this course having been adopted by the spinners without a common understanding between the different countries or states. As short time by a part of an industry is a sacrifice for the benefit of the mills that continue to run full time, the manufacturers who are now on short time have started an agitation to make the reduced schedule general throughout Europe. This call for international help naturally came first from Italy, the country where the cotton trade is most depressed. The replies are addressed to the International Federation, whose main object is to regulate the price of cotton by getting cotton manufacturers throughout the world to restrict consumption in accordance with a prearranged plan. These replies, which have been published in the Continental and English papers, are summarized as follows:

Austria. Production has already been reduced 25 per cent. When the majority of the spinners in other countries agree to a general curtailment there is no doubt but that the Austrian spinners will unite with them. The general opinion in the trade, however, is that it will not be possible

under present conditions to obtain an international agreement of this kind.

Belgium. At the present time a general agreement for short time does not seem practicable, but if the price of raw cotton remains at its present high level the situation may change and short time become general.

England. The cotton trade in England has been falling off for some time and the prevailing opinion is that the short time issue will have to be settled in the near future. The English cotton trade is well organized and any action in regard to short time will be the result of deliberation by the various associations of spinners and manufacturers. The present situation is outlined by Sir C. W. Macara, president of the International Federation in a public statement from which we take the following extract:

"Of course, the price of manufactured goods is largely dependent on the price of the raw material, and high prices act immediately and seriously in restriction of trade. The result is inevitable. Three-fourths of the product of the spindles and looms of Lancashire go abroad, India being the best market. The Indian ryot, I am informed, has at his disposal for all his requirements about 40s. annually, and the dearer the goods the smaller the quantity that he buys.

"Under the circumstances which I have briefly detailed it is clear that the question of reducing the output of the mills must come to the front. To go on accumulating stocks, with the raw material at its present price, would be ruinous. Still, we need not be alarmed about recourse to a spell of short time, providing we organize it on right lines, that is, every firm bearing its share of the burden. Of the 55,000,000 cotton spindles in England, 44,000,000 are controlled by the Master Cotton Spinners' Federation, and 4,000,000 by the Cotton Spinners' and Manufacturers' Association, the latter being the organization in which the weaving section of the industry is most largely represented. This leaves about 7,000,000 spindles outside the employers' organizations, and the trouble is that there are mill owners who will take advantage of the limitations which the majority impose upon themselves in the general interest and go full steam ahead.

"I feel tempted sometimes to say very strong things about them, but just now I will content myself with saying that their action is certainly un-English. If everybody acted as they act, and the survival of the fittest was the only rule we recognized, it is impossible to forecast the extent of the disasters which would ensue."

France. The French spinners are of the opinion that a short time schedule throughout the world is not possible, but that a reduction of running time will become general in the leading manufacturing districts of Europe. Before the French trade can take up the question of short time seriously it will be necessary to get the decision of the English trade as well as to wait for developments in the market for raw cotton.

Germany. Alsace is against the proposition to unite with other countries in running short time. A decision on the world proposition can be reached when the short time schedule is fixed upon and overtime is abolished. In Westphalia short time is not an issue because the stocks of goods are small and business is good.

Holland. The spinners and weavers are not inclined to enter into a general short time agreement. Most of them have their production sold for many months to come.

Portugal. It is impossible to organize short time in Portugal as such agreements are forbidden by law. Various manufacturers, however, are disposed to reduce production as business is depressed and profits have shrunk or disappeared entirely. Already a number of mills are running on a reduced schedule.

Spain. It is difficult, if not impossible, to bring about common action in regard to short time by the cotton spinners of Spain. Production has already been cut about 10 per cent. and one-third of the spindles in Spain have been running short time for a number of weeks. The operatives are now working 60 hours per week. The Spanish law does not permit running mills at night.

Switzerland. The short time proposition is welcomed by Swiss spinners and manufacturers, but they are of the opinion that it will be necessary for them to wait upon the action of other countries.

Sheep Dip in South Africa

We have given space in the two preceding issues to several communications regarding the use in South Africa of a sheep dip composed of caustic soda and sulphur. When this question was brought to our attention by an English firm last October, we wrote at once to the Chief, Division of Sheep, Department of Agriculture, Pretoria, South Africa, asking that official to send us a statement of the facts that have led his Department to give official approval to the use of caustic soda and sulphur dips. The reply, which follows, makes clear the position of the South African authorities, and the peculiar difficulties encountered in combating the spread of scab among the flocks in that country:

Department of Agriculture,
Division of Sheep, Pretoria,
November 25, 1913.

Editor Textile World Record, Boston, Mass.

Dear Sir: With reference to your letter of the 20th ultimo, on the above-mentioned subject, I am obliged to you for bringing this matter to my notice.

Briefly the facts are as follows: South African sheep have for years been suffering from scab and despite all efforts it has not so far been possible to eradicate it though no pains are spared. Previous to Union the Orange Free State Government recommended the use of a caustic soda and sulphur dip, while a lime and sulphur dip was

chiefly advocated by the late Government of the Cape Colony.

When Union took place a Division of Sheep was formed under the Department of Agriculture with a view to the eradication of scab and the improvement of the Sheep and Wool Industry. The evidence in favor of and against the various scab-destroying specifics was considered and it was found that lime and sulphur mixed in accordance with the formula set forth in the enclosed Bulletin was the best scab-eradicator available and the fact that it possessed preventive as well as curative properties was an additional recommendation in its favor. In certain districts, however, it was found that it was difficult to transport bulky packages of lime, while in others there was no fuel available for the proper preparation of the dip and in these circumstances it was thought well to recommend the use of caustic soda and sulphur dip (formula is shown in bulletin referred to) for use by farmers.

It was alleged by certain persons interested in the wool trade in Bradford that the specified remedies had a deleterious effect on South African Wools and that the Government's action was likely to injure South African Trade.

In these circumstances Charles Mallinson, one of the Department's Senior Experts, who was proceeding to England on a holiday, was asked to investigate and on his return he presented the report which will be found on page 671 of the accompanying issue (October, 1913) of the Agricultural Journal. In addition the Division is conducting field experiments and has dipped a considerable number of sheep in various scab destroying specifics and these are now being shorn with a view to their wool being sent to various authorities for report. These reports will be published in the Journal when they come to hand.

In addition to this the Department has chemically tested the caustic soda and sulphur dip again and it is proposed to amend the formula to agree with the results obtained from a series of experiments conducted in the Veterinary Research Laboratories (See page 746 of accompanying (November, 1913) Journal).

This Division is aware that caustic soda is used as a wool solvent, but it is submitted that the dip recommended is a combination of caustic soda and sulphur in which the solvent effect of the soda is neutralized by the action of the sulphur. (Vide second paragraph of the letter from Mr. Haslam, page 674 of the October Journal). Mr. Haslam is the Chief Chemist of what is probably the largest firm of Soap Manufacturers in the United Kingdom and his statement confirms the results arrived at by our own Chemists.

The Department has under consideration the desirability of fostering the export of South African wool to America and should matters go satisfactorily your buyers will, before long, have an opportunity of satisfying themselves as to the quality.

Yours very truly,

Stanley Y. Eakes,
Chief, Division of Sheep.

The following is taken from Mr. Mallison's report of his investigation of the question in England:

I made careful inquiries as to who were the principal users of South African wool, and I called upon every firm whose name was given to me. In no case did I hear of any serious complaint about scouring, though some said occasionally sulphur was sufficiently in evidence as to necessitate greater care in scouring, but South American wools were much worse than South African, in this respect.

In no case did I hear of any difficulty in dyeing, and during the whole course of my inquiry I have never had produced to me any single instance of any such difficulty ever having occurred, although I have everywhere asked for it. As will be gathered from the letter from T. H. Moore, wool dipped in caustic soda and sulphur or in lime and sulphur is alleged by the buyers to dye badly, but there is no ground for this allegation. As a matter of fact, streaky dyeing may be due to faults in scouring, milling, dyeing, steam-blowing, or blueing; at the same time let it be thoroughly understood that caustic soda or the liquor from lime will do all the harm the Bradford Chamber of Commerce states if not used in proper quantities and well mixed. Flowers of sulphur is largely used as a neutralizing agent; ground sulphur must never be used, as it is practically useless.

In some cases I got written evidence from large consumers bearing out what all told me, but I found many of them very chary about committing their opinions to writing. Extracts from some of the letters received are given at the end of this report. . . .

On looking at the South African wool on show at the London wool sales in July I noticed among storekeepers repacked lots, fleeces which bore traces of having been punished in the dipping either by the dip being too strong or not properly mixed. The tips of the staples had been scorched and rendered tender. I do not think that even in this case any trouble would result in dyeing, for the simple reason that in the process of manufacture these tender tips would be ground almost to dust and disappear in the form of waste. But it means a reduced price for the wool to begin with and a consequent loss to the farmer. I cannot emphasize too strongly the necessity for great care on the part of the farmers to ensure that the dip is properly mixed with ingredients of the proper quality and standard. For instance the sulphur must be flowers of sulphur, not rock sulphur, which is cheaper, but quite ineffective for counteracting the injurious qualities of the soda, which is the main reason for mixing the sulphur in the dip.

The whole and sole reason why what appear to be lower prices are paid for South African wool than for Australian is in the greater amount of dust and consequent shrinkage in scouring of South African wool as compared with Australian. I carefully watched the London wool sales and am satisfied that the prices paid for South African wool were quite as good as those paid for Australian of the same length and quality after taking the condition into account. Time after time I was told that we need to grow longer wool and to send less dust with it; in one or two cases the wool appeared as if the sheep had been shorn when the wool on their backs was not quite dry, and the

skirting was not done as well as it might have been; also long and short wool packed together in the same bale. All these things will have to be remedied before we get into line with Australia.

In his letter to Mr. Mallison dated June 21, 1913, Mr. Moore, of Huddersfield, says:

You ask me to put into writing the reasons which induced me in 1907 to report to the Free State Government that they might safely recommend the farmers to use the soda and sulphur dip without any fear of injury to the wool.

When in South Africa in 1905, I, along with Mr. Palmer, attended twenty-six conferences with the farmers, and discussed wool subjects in every town of the Free State. Everywhere I was questioned about soda and sulphur as a dip, and was very cautious in my replies. Like the wiseacres of the Bradford Chamber of Commerce, I knew that a strong solution of soda would dissolve wool, and I imparted this valuable information to the farmers, who laughed at me and showed me sheep and fleeces which had been dipped and in which I failed to discover any ill-effects whatever. Finally Mr. Palmer showed me at the Government farm sheep which had been dipped in soda and sulphur, some one month, some another, covering nearly every month of the year. This was in October, when the wool was approaching full growth.

On the earlier dipped sheep I failed to find any indication whatever, and could not possibly pick out sheep which had been dipped from among others which had not. Subject to tests to be made at home I formed the opinion that if the sheep were dipped shortly after shearing, or say any time up to within three months, no injury would be detected in the wool when shorn nine or eleven months later. Exposure to sun and weather in the interval would remove any traces of either soda or sulphur in the wool. The result of many hundreds of experiments since then, not only with samples, but with bulk, has only tended to confirm this common sense view, which was the one taken by the farmers themselves from the outset. A healthy sheep naturally grows healthy wool. Give the sheep a chance by killing the scab upon it, and trust nature to do the rest. The farmers knew what they were doing. . . .

It will be noticed that one effect of the dip upon perfectly clean wool dyed immediately after, was to give it an increased attraction for dyewares. Upon this fact rests the whole of the elaborate fabric of objections raised by one or two individuals under the protecting wing of the Bradford Chamber of Commerce. The custom in Bradford is for most manufacturers to send their pieces out to dyers to dye and finish. Dyeing is a most delicate operation, in which it is very easy to make a mistake. As one versed in the practical work of manufacturing, you know perfectly well that "streaky" or irregularly dyed cloth may be caused by quite a number of causes apart from the wool. When a defective finished piece of cloth comes forward a battle royal ensues between the dyer and manufacturer as to the cause of the fault. The manufacturer says it is the dyer's fault, and he must stand to the loss. The dyer says it is the wool which is wrong, or the spinner has put too much or too little twist in the yarn. Each one tries to save his own skin (or pocket) at the expense of the other. Certain well-meaning gentlemen who write for newspapers and who are always on the lookout for a subject that will "catch on" at once began to elaborate the possibilities of all "streaky" pieces being caused by mixing wool, which had been dipped in soda and sulphur with new wool which had not. The dyers were delighted with this new excuse. The manufacturers knew it was absurd, and not one of them who bought South African or South American wool has discontinued doing so in consequence of the vaporings of the newspaper man. Because a certain dip has a certain effect upon clean wool when dyed a few minutes after dipping, it is too much of a strain upon ordinary intelligence to assume that the same effect will result upon wool which was only a quarter grown when dipped on the live animal nine months before, and afterwards exposed to such a sun and such storms as we know nothing of in this country.

Any dip which will permanently injure the wool will, I contend, also destroy the constitution of the sheep. The farmer is the best judge as to avoiding this. I say let him dip in the dip which is most effective for giving him a healthy flock, and he need not have any fear about losing the market for his wool.

The following is a portion of a letter, dated July 29, 1913, from C. Haslam, chief chemist for Joseph Crosfield & Sons, Ltd., Warington, England, to Mr. Mallinson:

It has been contended by certain correspondents that the caustic soda in this dip has a damaging effect upon the wool, but the composition of the dipping fluid, as prescribed by the South African Government, is such that when the directions given for mixing are properly followed out, there is no free caustic left in the solution, as this is entirely neutralized by the large excess of sulphur with which it is mixed. In making this statement we would particularly emphasize the necessity of carrying out the South African Government's instructions implicitly, making certain the flowers of sulphur have been employed. . . .

There can be no doubt that a mixture of caustic soda and sulphur, in which the proper quantities have not been employed, and in which inferior articles have been used, so that the caustic soda has not been completely "killed" by the sulphur, is an unsatisfactory mixture and injure the sheep, but this contingency can never arise when the sulphur is that specified by the South African Government, and when the directions for mixing are properly followed.

To the lay mind the word caustic and the words caustic soda are liable to be altogether misunderstood, and to be considered dangerous, and this chemical would naturally be so were it not neutralized. All soluble arsenic dips contain soda in combination with the arsenic, and though caustic soda may have been and almost invariably is used to dissolve the otherwise insoluble arsenic trioxide, no one thinks of this combined soda as

having retained its "caustic" character, and no more should it be thought that the soda which exists in a properly prepared sulphur dip is still "caustic" in its properties.

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The Average Yarn Number of Cotton Cloth

The following item made its appearance last month in a number of English papers:

J. W. Holden, who represents the Calico Printers' Association in Canada and incidentally is also a director of the Manchester Athenaeum, has recently been spending some time in the United States with the object of ascertaining the exact rate of tariff under the new Act at which a number of the qualities of printed calicoes which this concern produces will be admitted into the States. Before he left Manchester the experts were in doubt as to the interpretation of the paragraph in the new Tariff act relating to printed calicoes and the term "yarn number". It has, however, been made clear that a new meaning has been given to the expression "yarn number," as the term is used in the cotton trade. The tariff meaning is that the yarn number indicates the assumed length of yarn in a pound of cloth. The effect of the new meaning of the term "number of yarn" is to base the cloth rates on the threads per inch and square yards of cloth per pound. Altogether the new United States tariff is much less complicated than the old one, and it will secure a minimum of vexatious disputes when it comes to be interpreted. . . .

If the only object of Mr. Holden's visit to the United States was to "ascertain the exact rate under the new tariff," he might just as well have stayed at home and obtained the information in England as he evidently obtained it in the United States, from the October issue of the Textile World Record. That he did get his information from this magazine is evident from a comparison of the above report of his investigation with the following extract from our October article, the language being identical in both:

. . . a new meaning has been given to the expression "yarn number" as the term is used in the cotton trade. The tariff meaning is that the yarn number indicates the assumed length of yarn in a pound of cloth. The effect of the new meaning of the term "number of yarn" is to base the cloth rates on the threads per inch and square yard of cloth per pound.

It is always gratifying to us to see our language and ideas accepted by others, but the satisfaction is more pronounced when proper credit is given, as it should have been given by Mr. Holden in the above case.

Imported Wool Goods

Since the election in November, 1912, it has been as certain as anything political can be that lower rates on wool goods would go into effect as a result of a tariff law passed in 1913. The prompt support given by the President and Senate to the House bill providing for free wool and 35 per cent. on goods gave the trade assurance early in the summer that this would be the rate on woolens and worsteds, so that importers have had six months in which to prepare for business under the new law. As a result, selling samples of a great variety of wool goods were shown to buyers in December and it is reported that many orders were booked for delivery after January 1. We have obtained a number of samples of these goods, and analyzed them for the purpose of aiding the manufacturers in this country to judge of the competition that is developing from abroad. The samples received by us can be seen at our Boston office. The results of the analyses are as follows:

No. 1. Worsted Suiting, $1.25 net per yd. 56 to 58 in., 11 to 12 ozs.
Warp ..... 63E 2/27s wors.
Filling ..... 59P 2/27s wors.
Actual Weight ..... 9.6 ozs., 56 in.

No. 2. Irish Woolen, $1.39 per yd. 56 in., 16 to 16 1/2 ozs.
Warp ..... 46E 3 1/2 Runs
Filling ..... 42P 2.8 Runs
Actual Weight ..... 15.7 ozs., 56 in.

No. 3. Woolen, $ .875 per yd. 54 in., 15 to 16 ozs.
Warp ..... 38E 2.7 Runs
Filling ..... 36P 2.9 Runs
Actual Weight ..... 14.2 ozs.

No. 4. Worsted Suiting, $1.75 per yd., reg., 56 in., 11 ozs.
Warp 79E 2/48s
Filling 77P 2/48s
Actual Weight ..... 10.3 ozs., 56 in.

No. 5. Worsted Suiting, $1.37 1/2 per yd., reg., 56 in., 11 ozs.
Warp 71E 2/41s
Filling 68P 1/27s
Actual Weight ..... 9.5 ozs., 56 in.

No. 6. Worsted Suiting, 70 cents net, 14 ozs., 57 to 58 in.
Warp 73E 2/38s
Filling 58E 2/29s
Actual Weight ..... 10.5 ozs., 56 in.

No. 7. Black Worsted Coating, $2.15, reg., 16 ozs., 58 in.
Warp ..... 156E 1/27s wors.
Filling ..... 103P 1/28s wors.
Actual Weight ..... 14.9 ozs., 56 in.

No. 8. Blue Worsted Serge, 79 cents net, 11 ozs., 55 in.

Warp ..... 66E 2/32s wors.
Filling ..... 61P 1/23s wors.
Actual Weight ..... 10.6 ozs., 56 in.

No. 9. Blue Worsted Serge, 55 cents net, 8 1/2 ozs., 56 in.
Warp ..... 51E 2/36s wors.
Filling ..... 51P 1/27s wors.
Actual Weight ..... 7.4 ozs., 56 in.

No. 10. Blue Worsted Serge, 57 1/2 cents net, 56 in.
Warp ..... 53E 2/31s wors.
Filling ..... 50P 1/22s wors.
Actual Weight ..... 8.8 ozs., 56 in.

No. 11. Blue Worsted Serge, 58 1/2 cents net, 56 in.
Warp ..... 49E 2/31 wors.
Filling ..... 48P 1/20s wors.
Actual Weight ..... 8.9 ozs., 56 in.

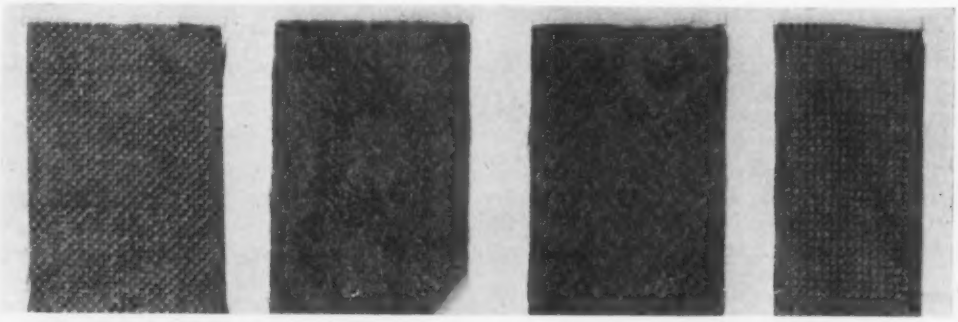


FIG. 1 FIG. 2 FIG. 3 FIG. 4

SAMPLES OF ENGLISH WOOLENS AND WORSTEDS SOLD IN THE AMERICAN MARKET

The sizes given are for the yarn as found in the finished cloth. Allowance must be made for take-up, loss of weight and shrinkage in length in order to determine the spun size. One noteworthy feature of these English goods is the discrepancy between the actual weight and that marked on the ticket. In every case the sample weighs less than the weight indicated. These samples can be seen at our Boston office.

Togo Cotton

The German Colonial Association has recently issued a report which is skillfully designed to arouse fears of a cotton famine, inspire belief that colonial cotton growing is the only means of escaping the danger, and induce German manufacturers, particularly cotton spinners, to contribute additional and greatly needed capital for carrying on the colonial cotton enterprise. First comes the spectre of famine:

In 1912 the consumption of cotton in Germany amounted to 2,000,000 bales of 550 pounds each, valued at $145,000,000. Owing to the magnitude of our requirements in this industry a reliable supply of cotton for Germany becomes one of the most important politico-economic and social questions, as it means the preservation of a flourishing German industry and the support of a large number of people.

The yearly consumption of cotton in Germany in 1840 amounted to 2/3 of a pound per capita and in 1912, 16 3/4 pounds per capita. Cotton is becoming one of the necessaries of life.

The report next points out the means of assuring a constant supply of cotton for the German empire:

In order to guard against the threatened monopoly of cotton by America and the perilous dependence of our cotton industry on the American supply, the Colonial Committee was organized about the beginning of this century with the object of supplying Germany, as far as possible, with cotton from our own colonies. This example has been followed by the other great powers having possessions in Africa. Experience has proved that the growing of cotton is not only possible in many parts of Africa, but promises to become a profitable industry. This is especially true of German East Africa and today cotton is Germany's most important Colonial product. Many obstacles have been encountered in the Colonial cotton fields, including floods, plant diseases, loss of oxen by the tsetse fly, scanty rainfall, necessity for artificial irrigation, lack of experienced cotton planters, lack of uniformity in the grade of the cotton, and deficiency in transportation by rail, water and motor trucks. In spite of all these difficulties the production has steadily increased from year to year and in 1912 the crop in German East Africa and Togo amounted to 9,730 bales, which was sold in Germany at an average price

of 15.3 cents per pound for East African cotton and 12.9 cents per pound for Togo cotton, the total proceeds being $825,000.

The steady increase of the Colonial cotton supply is indicated by the following figures:

1902	bales	82
1905		1,233
1909		4,120
1912		9,730
1913 (est.)		14,000

The report closes with this earnest appeal for more money:

The German Reichstag has not yet made the 5-year appropriation of $50,000 for the Colonial cotton industry which was proposed in the spring. The Colonial Committee has expended from its own treasury $22,500 for cotton seed and $12,500 for carrying on work already in progress. An appeal is being made to the German textile industry and allied trades. During the past year $10,000 has been received from new subscribers who have heretofore looked upon our enterprise with disfavor. On the other hand, however, the old subscribers are short in their payments. The Committee appeals earnestly to the public spirit of those engaged in industry and trade to supply the necessary financial support to this enterprise. The coming generation will thank us for our foresight and timely effort to provide for this great industry.

Government Lectures on Foreign Markets for Cotton Goods

For a number of years the government has been engaged in an attempt to promote the export trade in cotton goods by sending special agents to investigate trade conditions in foreign countries. A large number of their reports have been published and distributed to the cotton trade and in addition the department has placed on exhibition in various cities collections of cotton goods received from these agents. It has been evident, however, that much valuable information regarding competitive conditions abroad has failed to get beyond the government archives at Washington. Realizing this fact the Department of Commerce has decided to send Ralph M. Odell, one of its commercial agents, on a lecture tour throughout the country. Mr. Odell has recently returned from his second trip abroad and during his services as commercial agent has made a study of the cotton goods trade and industry of Spain, Portugal, Italy, Russia, the Balkan States and parts of Turkey. His second journey took him to Egypt, the Red Sea markets (Arabia, Eritrea, Somaliland, the Sudan, and Abyssinia), British East Africa, Uganda, German East Africa, Portuguese East Africa, and the Union of South Africa. A large number of cotton goods have been collected in each country and Mr. Odell is exhibiting these samples on his tour. The itinerary of the trip is as follows:

December

29. Charlotte, N. C., Greater Charlotte Club, American Cotton Manufacturers' Association.
30. Greenville, S. C., Board of Trade.
31. Augusta, Ga., Chamber of Commerce.

January

2. Atlanta, Ga., Chamber of Commerce.
5. Birmingham, Ala., Chamber of Commerce.
7. Mobile, Ala., Chamber of Commerce and Business League.
8. New Orleans, La., Office of the Bureau Association of Commerce Bldg.
12. Memphis, Tenn., Business Men's Club.
14. Nashville, Tenn., Board of Trade.
16. Knoxville, Tenn., Board of Trade.
19. Greensboro, N. C., Individual Manufacturers.
20. Durham, N. C., Individual Manufacturers.
22. Danville, Va., Commercial Association.
24. New York City, Bureau's Office, Room 337, Custom House Bldg., Cotton Goods Manufacturers Exporters' Association.

February

2. Boston, Mass., Chamber of Commerce, National Association of Cotton Manufacturers.
5. New Bedford, Mass., Board of Trade.
6. Lowell, Mass., Board of Trade.
9. Fall River, Mass., Chamber of Commerce.
10. Providence, R. I., Board of Trade.
16. Philadelphia, Pa., Chamber of Commerce, Commercial Museum.
19. Return to Washington.

Profits in the English Cotton Industry

The American textile trade now has more than the usual interest in the state of trade in the textile industry of foreign countries. Depression abroad will be promptly followed by the exporting or dumping of goods on the American market, while foreign prosperity means foreign indifference to the American trade and consequently greater freedom here from foreign competition. For many years John Kidger, of Oldham, has prepared annual statements of the operations of a selected list of Lancashire cotton mills. His report for 1913 was issued a few weeks ago, and from it we take the following extracts:

Although the closing year has not been so profitable for spinners as its predecessor, things

have by no means been so bad from an investor's point of view. In the early months the position was fairly healthy, with increasing dividends and booming of shares, but for the last few months spinners' margins have somewhat dwindled away, accompanied by a falling off in share value on account of the nervous feeling as to the immediate future of things generally. With the exception of a few individual mill troubles on account of the operatives claiming compensation for spinning and working what they said was inferior cotton, the industry has been free from labor unrest. This in a large measure must be attributed to the Executive of the Employers' and Operatives' Federations signing a five years' truce and mutually agreeing not to disturb the current list controlling the standard rate of wages to be paid for five years up to and ending July, 1915.

SUMMARY OF 100 COMPANIES

Total profits of 95 companies	£550,458
Less losses of 5 companies	£10,578
Net profits of 100 companies	£539,880
The mean average dividends paid	8%
Amount paid away in dividends	£283,772
Credit and reserve balances in hand of 87 companies	£786,183
Less debit balances of 13 companies	£70,177
Net credit balances and reserve funds in hand of 100 companies	£716,006

The following facts come out if one forms the assumption that the 100 companies had only one huge mill. The total amount of the paid up share capital is £3,691,865, ordinary loans £2,225,345, and mortgage £164,088, making a total capital employed of £6,081,298. After charging revenue with loan and mortgage interest and allowing for wear and tear of plant, the net profit on the year is £539,880. The average profit per company in 1913 is £5,398, against £5,584 in 1912.

The 1913 trading profit of £539,880 on the £3,691,865 share capital employed works out to a percentage of profit of £14, 12s, 6d, against £15, 6s in 1912, a decrease on the year of 13s, 6d. Dividends have been paid averaging in 1913 8 per cent., against 7 1/5 per cent. in 1912.

Assuming that 4 per cent. interest on £2,389,443 borrowed capital had not been debited to revenue, the total profits earned would have amounted to £635,457. This on the combined share and loan capital works out to a percentage of profit earned of £10, 9s, against the combined capital earnings of 1912 of £10, 16s, 1d. The net credit balances in hand at the end of 1913 amount to £716,006, against £602,696 in 1912, an increase on the year of £113,310.

The present book value of buildings, machinery, and motive power is £4,736,182. Total number of weft spindles 4,773,512, twist spindles 3,113,816, and ring spindles 811,166, a total yarn-producing capacity of 8,698,494 spindles. Calculating (according to custom) that the ring spindles are equal to about 1 1/2 mule spindles, the total yarn-producing capacity represents 9,104,907 spindles. The present book value of plant has been written down to 10s, 5d per spindle.

THIRTY YEARS' PROFITS AND LOSSES

Below will be found the net profit and loss of the spinning trade from 1884:

Year.	No. of Companies.	Profit £	Loss £	Avg. Div.
1884	60	125,000	—	5
1885	87	—	2,730	2
1886	90	—	61,718	3
1887	88	86,810	—	4¼
1888	85	250,932	—	5
1889	86	220,587	—	5
1890	91	384,050	—	7
1891	101	38,758	—	5¼
1892	99	—	94,770	1¼
1893	99	—	60,790	1
1894	94	4,491	—	1½
1895	94	63,167	—	1⅝
1896	94	49,631	—	1¾
1897	94	157,570	—	3
1898	90	271,804	—	4⅓
1899	86	381,176	—	6⅛
1900	80	344,548	—	7¼
1901	80	279,545	—	7⅛
1902	85	—	1,436	4⅔
1903	90	—	45,322	3
1904	90	31,729	—	2½
1905	90	693,070	—	7
1906	90	590,002	—	9⅜
1907	100	1,321,157	—	15⅞
1908	100	586,511	—	11¾
1909	100	—	272,072	7⅜
1910	100	—	368,006	5⅜
1911	100	29,812	—	4⅜
1912	100	558,450	—	7⅛
1913	100	539,880	—	8

The above table shows that during the last 30 years 22 have been profitable periods, the aggregate profits amounting to £7,008,680 and loss for the eight years being £906,844, or a net profit earned of £6,101,836. The average dividend paid to shareholders works out to 5 1/3 per cent. on the 30 years.

Unsold Wool at Boston

The Boston Wool Trade Association has issued the following statement of the amount of unsold wool at Boston on Jan. 1, 1914, compared with the stock on hand on Jan. 1, 1913:

	Jan. 1, 1914 lbs.	Jan. 1, 1913 lbs.
Territory, California, Texas	23,627,371	21,732,733
Fleeces (grown east of the Mississippi River, and Minnesota, Iowa and Missouri)	1,348,029	4,712,000
Scoured	2,798,598	3,605,379
Pulled	2,656,457	1,872,206
Foreign, Class 1 and 2	10,550,064	8,719,383
Foreign, Class 3	2,820,030	2,208,154
Total	43,800,549	42,849,855

Stock Taking Committee:
Francis H. Manning and Geo. W. Benedict.

The Lindquist and Other "Pure Textile" Bills

Hearings on the proposed "pure textile" legislation have been in progress during the past month by a sub-committee of the House Committee on Interstate and Foreign Commerce. Textiles and shoes came in for the chief share of attention, the shoe manufacturers being strongly opposed to the proposed bills. The textile manufacturers have been strangely silent in regard to this subject, but the congressional advocates of the measures made up for this by vociferous repetition of arguments that have been repeatedly exploded in the past. Representatives Steenerson, of Minnesota, introduced a bill last spring, which provides penalties for misbranding articles of commerce and for not branding imitations of such articles to show their real character. He appeared at the hearing on December 11, and explained his bill:

> It would not impose a hardship upon the merchants or manufacturers to compel them to label an article genuine or imitation. Only in instances where imitations are sold as genuine would the bill apply. To my mind this is the most logical way to instil honesty in business and protect the buying public from phony goods. We should legislate in favor of labor sometimes, and not wholly in favor of the industries.

Mr. Steenerson would extend the bill to cover misrepresentation of goods in advertisements, and said:

> Papers which carry such advertisements should be barred from the United States mails.

Congressman Lindquist, of Michigan, appeared at the hearing on December 10. He began his statement by saying:

> I have given a great deal of thought to this subject, because it is one that has a direct effect upon the pocket purse of millions of people, and one, which, in my estimation, if enacted into law, will absolutely reduce the high cost of living. I believe that there is no commercial product on which the people are so blind as to the real value, as those which are made from fabric, leather and rubber, and more especially those which are of everyday use, such as clothing, wearing apparel and footwear.

Referring to wool goods Mr. Lindquist said:

> One of the most important features of this or any other pure fabric bill that has been introduced in Congress, is that part of the bill which pertains to the question of determining the quantity of each constituent in a cloth fabric that is made from part shoddy and part new wool. You will note that my bill differs from all others, as I do not require the percentage of these two constituents when used in the manufacture of the same article. The reason of this, is, because in testing a garment made from part shoddy and part new wool, the result of the test has the same effect upon each of these constituents, so it would be impossible to determine the exact percentage of each. In such cases, the label would state that the article contains a portion of both shoddy and pure wool. This can be ascertained by a microscopical test.

On May 10, 1913, Mr. Lindquist introduced a "pure textile" bill which provided that:

> All fabrics and articles composed in part of pure wool, pure silk, pure cotton, pure linen, or any other vegetable, animal or mineral substances shall be marked, tagged, or labeled in plain letters showing all constituents contained therein.

While the Lindquist bill of May 10 does not require the tagging of wool goods to show the percentage of shoddy, Mr. Lindquist introduced in the House on Dec. 8, 1913, only two days before his statement to the Committee, a "pure textile" bill (H. R. 110,080) which provides that:

> All fabrics and articles composed in part of pure wool, pure silk, pure cotton, pure linen, shoddy, or any other vegetable, animal, or mineral substances shall be marked, tagged or labeled in plain letters showing all constituents contained therein and the percentage of each.

Mr. Lindquist should make it clear which Lindquist "pure textile" bill he opposes and which one he supports. It would naturally be supposed that the last one, introduced on December 8, represented his maturer ideas of how the public should be protected, and yet we find him on December 10, repudiating the latest product of his brain and assuring the Committee that its provisions regarding the percentage of shoddy in wool goods is impracticable. It is impossible to follow or escape from a statesman who rides two horses as Mr. Lindquist does. Soon after his statement of December 10 was made we wrote him as follows:

> December 18, 1913.
>
> Hon. F. O. Lindquist, Washington, D. C.
>
> Dear Sir: The following extract is from the report of a statement made by you on December 10 at the hearings on the so-called "pure textile" bills before the sub-committee of the Committee on Interstate and Foreign Commerce:

(Here follows the extract given above.)

I am writing this letter to ask if you are willing to subject to a scientific test your claim that the presence of wool and shoddy in a fabric can be determined by a microscopical test. If so I desire to make the following proposition:

I will send you six (6) samples of woolen cloth. You will have each of these samples analyzed or examined under the microscope by three experts to be selected by you and who are to make the examination independently of each other and to send their reports as to the presence of wool and shoddy to you.

You to send the reports of the examinations when received to the Hon. Alben W. Barkley, chairman of the sub-committee, and I at the same time to send to Mr. Barkley a statement of the materials of which each of the six fabrics is composed, this statement to be obtained by me from the mill in which the goods were made.

You to request Chairman Barkley to insert in the report of the hearings the reports of the three analysts and the statements by the mill.

The fairness of my proposition is beyond question and I trust you will consent to it and thus subject your claim to a test that cannot fail to be conclusive as to the possibility of determining the presence of shoddy in wool goods.

No reply to that challenge has been received from Congressman Lindquist. The Michigan Congressman will probably not accept it because such a test would demonstrate to the Committee and the country the folly of the Lindquist bill. It is as impracticable to determine for administrative purposes the presence of shoddy in wool goods by examination under the microscope as Mr. Lindquist admits it is to determine the percentages of wool and shoddy by a chemical test. His admission as to the last-named test would be an encouraging indication that the gentleman from Michigan was learning about the subject, were it not for the fact that he had introduced in the House only two days before, a bill embodying all the impossibilities and absurdities that have been incorporated in "pure textile" propositions for the past twelve years.

Mr. Lindquist is a manufacturer of clothing at New York, Greenville and Muskegon, Mich., and in his statement before the Committee he took pains to make it clear that those who defrauded the consumers by misrepresenting the character of textile materials are to be found among his competitors:

Mr. Chairman, in referring to the manufacturer I want to make it clear to you that it is not the manufacturer of the cloth fabric, who makes cloth for men's clothing, that it guilty of the misrepresentation, as he is subject to the demand and call for such fabrics as are ordered by the clothing manufacturer. For example, the clothing manufacturer who purchases great quantities of goods, in almost every case, knows the exact quality of the fabric that he purchases.

He then went into details of cloth construction:

Perhaps there are no commercial products on which there is a greater swindle than in the clothing industry. It is a known fact that manufacturers have deliberately placed a label on cotton mixed and shoddy goods, stating that the goods were all wool. Such a label naturally enables the merchant to see the goods at a higher price than would be possible if that same garment was prop-

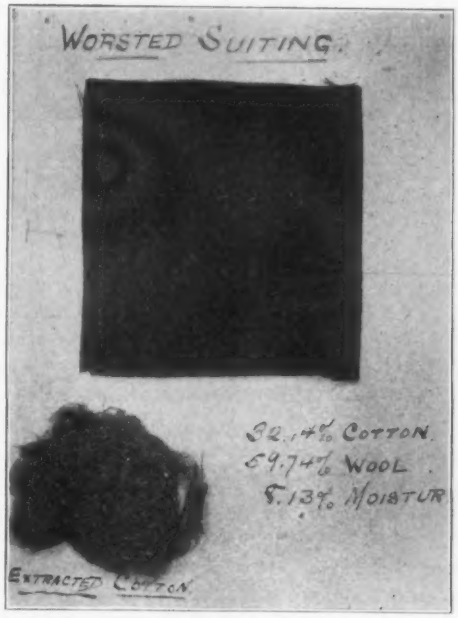


FIG. 1. COTTON WARP AND WORSTED SERGE TESTED FOR CONGRESSMAN LINDQUIST BY THE NEW BEDFORD TEXTILE SCHOOL

erly labeled because the average person cannot detect the quality from which a suit of clothes is made. It takes an expert to judge the quality of the cloth fabrics.

For example. I have here a piece of staple serge, which is commercially known and sold by many merchants as pure wool. I have had this piece of goods tested by the New Bedford Textile School, of New Bedford, Mass., one of the largest and most reliable textile schools in the United States. The result of their test proves this cloth to contain 32.14 per cent. cotton, 59.74 per cent. wool, and 8.12 per cent. moisture.

Now, then, I have no doubt but what the laboring people of this country are purchasing clothing made from this quality of serge, and in most cases are paying $5 more for the suit simply because it

is woven to imitate a high grade pure worsted. The contention I make is that if the manufacturer is compelled to put a label on this piece of goods, stating that 32 per cent. of the cloth was cotton, that the suit would then be marked to sell at a legitimate price, and it would enable the people to buy their clothing at a big saving.

Now, then, this piece goods is one of the most staple and commonly used fabrics in the ordinary suit of clothes. It is a staple blue serge, and when there is such a deception on a staple piece of goods such as I have exhibited, you can imagine to what extent the public is being swindled on

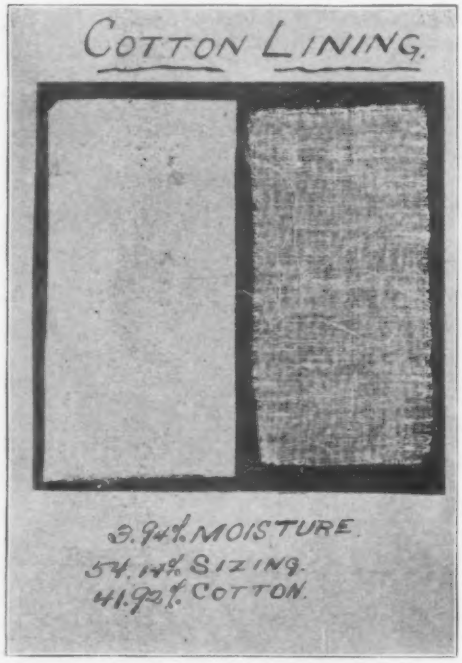


FIG 2. COTTON LINING TESTED FOR CONGRESSMAN LINDQUIST BY THE NEW BEDFORD TEXTILE SCHOOL

novelty suiting. This one demonstration is absolute proof that a law requiring the labeling of cloth fabrics would absolutely reduce the clothing cost to the consumers of this country.

Knowing that the New Bedford Textile School had been making tests of textile fabrics for Mr. Lindquist we obtained a copy of the report and photographs that the Congressman had obtained from that school, and which are shown in the accompanying illustrations. Undoubtedly, as Mr. Lindquist states, there have been clothing manufacturers who have sold cotton and worsted mixed serges as "all wool," but to represent, as Mr. Lindquist's testimony does, that the cotton worsted fabric he exhibited "is one of the most staple and commonly used fabrics in the ordinary suit of clothes" and that selling cotton and wool mixed staple and fancy goods

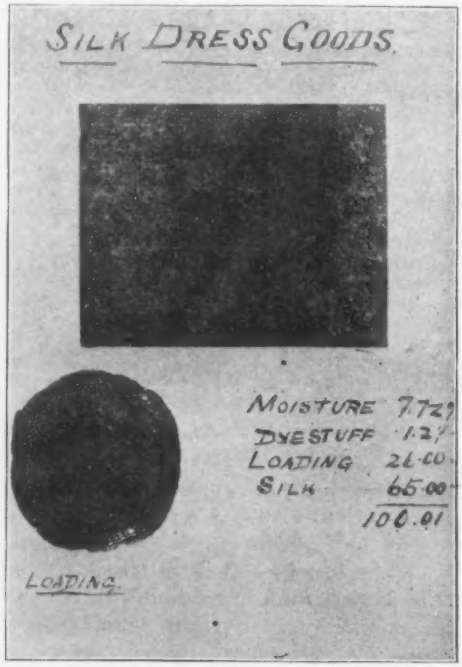


FIG. 3. A SILK FABRIC TESTED FOR CONGRESSMAN LINDQUIST BY THE NEW BEDFORD TEXTILE SCHOOL

as "all wool" is a common practice, is to convey an impression that is false. It would indeed be a poor specimen of a retail clothing merchant who would buy cotton and wool goods for all wool. The manufacturers of clothing cannot make a practice of selling cotton mixed goods as "all wool" because the retail merchants know too much about cloth. The exceptional cases where such a fraud is practiced by clothing manufacturers, and the somewhat more numerous cases where the retailer is guilty can be prevented by a law patterned after the British Merchandise Marks Act, which punishes such misrepresentation.

Incidentally Mr. Lindquist, who is a clothing manufacturer, told of the methods of

doing business in his industry. Coming as it does from an expert, this may be accepted as authoritative:

> Let me explain to you why the clothing manufacturer is opposed to placing a label upon his products. He places an order with the manufacturer, let me say, for 10,000 yards of cloth fabric. He instructs the manufacturer to make these 10,000 yards of goods up in 10 different shades. He in turn makes this cloth into suits, ready for sale.
>
> Now, then, bear in mind that each of the 10 different patterns is of the same quality of goods. The only difference being in the color of the dye and the designs. Now then, each garment of these 10 different designs cost the clothing manufacturer the same amount of money, but in pricing these goods he prices them according to the pattern. Perhaps he will take one modest pattern and sell it for $7.50, another pattern for $8, another for $9, and so on up, so you would see that he would have an objection to placing a label upon his products, because each of those garments would show upon the label that they are all of the same quality.

Mr. Lindquist next told about a sample of cotton goods that had been tested by the New Bedford Textile School:

> I have here also a piece of white cotton goods which has been tested by the New Bedford Textile School, and which shows that it contains 54.14 per cent. of sizing, 41.92 per cent. of cotton, and 3.94 per cent. of moisture. I do not exhibit this piece of cotton goods for the purpose of leading you to believe that all cotton goods, such as cotton sheeting, cotton shirting and dress goods, contain the amount of sizing as is contained in this sample. I simply offer this exhibit for the purpose of showing you to what extent cotton goods can be adulterated in the same manner.
>
> Sizing is a process by which the weight of the cloth is greatly increased, which is done in the course of manufacturing the cloth by adding a superfluous amount of starch and clay, and I feel satisfied that this weighting is done for the purpose of deceiving the public. All goods sold by the yard are sold by weight and designated by ounces. For example, a six-ounce piece of cotton goods should contain six ounces of cotton to the yard.
>
> Hence the consumer in purchasing a piece of six-ounce goods would expect that the goods contained six ounces to the yard, and in this case you could readily see by the test of the goods I have exhibited contains about 41.02 per cent. cotton, the balance consisting of nothing but starch and clay, which does not add to the wearing value of the cloth. I have been told that it is possible to weight cotton goods up to 85 per cent.

The photograph of this sample, which we obtained from the New Bedford Textile School, is labeled "cotton lining". The percentage of sizing, which, as Mr. Lindquist correctly states is exceptional, was undoubtedly introduced to impart stiffening to a low priced lining. If such a fabric is used in the interior of a garment, it is difficult to understand how it could be intelligently described to the consumer by means of a label on the outside. Any abuses of this kind that might develop in the sizing of cotton goods would be effectually covered by such a law as the British Merchandise Marks Act.

Mr. Lindquist showed the Committee a sample of silk which had been tested for him at the New Bedford Textile School:

> Here is a piece of silk bought in one of the large stores of New York city. It has every appearance of having been made from pure silk, and according to the chemical test made by the New Bedford Textile School, it contains 7.72 per cent. moisture, 27.28 per cent. of dyestuffs, and 65 per cent. silk. Yet in the purchase of this silk the public is led to believe that they are purchasing genuine silk. The quality of silk depends entirely upon the amount of loading. I am told that a piece of genuine silk that is absolutely free from weighting can be packed away in a trunk for 50 years without showing the least sign of deterioration, whereas silk that has been loaded will often crack three months after its manufacture.

The adulteration of silk by weighting is not as simple a proposition as Mr. Lindquist's statement and the New Bedford test led the Committee to believe. The determination of the proportions of silk, weighting material and dyestuffs is beset with difficulties, uncertainties and impossibilities. This fact had led at least one of the leading textile testing establishments of this country to refuse to make tests of organic loading in silk goods. For years the textile chemists of Europe have been working on the problem in order to stop the overweighting of silk goods, which is recognized as a burden on the silk manufacturer as well as on the consumer, but no certain method of determination has been found.

Notwithstanding these well-known conditions, we find a clothing manufacturer of Michigan, elected to office for the first time in the congressional election of November, 1912, taking his seat in Congress on April 7, and about a month later, on May 10, rushing forward with a proposition to stop the evil of weighting silk, which has hitherto baffled the chemists and silk manufacturers of the world. What is the Michigan method? Why, simply to pass the Lindquist bill requiring silk goods to be tagged to indicate the amount

of weighting, prosecutions for misbranding to be begun on the evidence of tests made by the Bureau of Chemistry of the Department of Agriculture, the punishment on conviction to be fine or imprisonment, or both. Mr. Lindquist is very confident in his statement before the Committee, but the real character of his statesmanship is shown by the careful omission of reference to the well-known and so far insuperable difficulties in determining the amount of weighting in silk goods.

Toward the close of his statement Mr. Lindquist sought to strengthen his case by the following reference to the laundrymen of the country:

> The lack of a pure fabric law is a serious handicap to some of the large industries of this country. Take for example the laundrymen of America. The laundry business in this country is a great enterprise. It represents an investment of $105,000,000. Thousands of persons depend upon this great industry for their livelihood. Soap manufacturers, starch manufacturers, laundry machinery manufacturers of great magnitude owe their existence to this one industry, which also gives employment to thousands of people, and for years this great organization has been appealing to our Government for a pure fabric law. Through the lack of a pure fabric law the laundry companies are constantly being compelled to pay an indemnity to their customers for goods claimed to have been damaged by them. The truth of the matter is that they were damaged or adulterated at the factory in which they were made.

Not a word from Mr. Lindquist regarding the undoubted fact that textiles can be and often are seriously damaged in the process of laundering, but all such damage is laid at the door of the textile manufacturer. We have had an opportunity of discussing this question with the prominent laundryman from whom Mr. Lindquist obtained much of his information. In striking contrast to Mr. Lindquist, this gentleman admitted that goods could be and were injured in the process of laundering, although he claimed that the laundry was held responsible for much damage and many defects for which the manufacturer was responsible. Mr. Lindquist is unfortunate in his laundry argument, which will serve only to call attention to the destruction of textile materials by the mechanical and chemical process of laundering. This will renew the agitation for a bill to regulate steam laundries, such as was introduced in 1903 by Congressman J. Hampton Moore, of Pennsylvania, who, in discussing that measure said:

> The purpose of the bill has no other significance than that it is desired to compel those who take the property of the public into their laundries to treat it decently and return it in good order. Why should not this be done? Laying aside the aggravation which comes to men and women alike as the result of their nerve-racking laundry experiences, why should not the proprietors of these establishments give the same careful attention to their work as is required in other lines? Why should they be permitted wantonly to destroy property that is placed in their keeping?

Congressman Philip P. Campbell, of Kansas, introduced in the House on April 17, 1913, a bill requiring that all products offered for sale should be marked to show the name of the manufacturer and the materials of which each article is composed. This, as Mr. Campbell made plain to the Committee, is the Lindquist bill in another form:

> Mr. Campbell—My bill requires that the label state also the nature of the material entering into the suit of clothes.
>
> The Chairman—But take wool, cotton, or half wool and cotton, or shoddy, or some other material.
>
> Mr. Campbell—Yes; let him state what it is.

It is not necessary to follow Mr. Campbell's arguments in detail. Two extracts will show that his study of the question has been as superficial as that by Mr. Lindquist. He told the Committee how far the United States is behind other countries in this class of legislation:

> We are further behind in this particular than is any other country that pretends to be a great manufacturing and commercial country. Germany and France and England have long required the highest possible standard of every product of manufacture that enters into their commerce, and the manufacturer is held strictly to account for the nature of the article, and he gives his name and address and holds himself out as responsible to the public for every article that he places upon the market. We are further behind in that respect than almost any other country in the world.

At that point an interruption exposed Mr. Campbell's ignorance of the foreign conditions about which he was talking so glibly:

> The Chairman—Have you read the English law upon the subject of frauds, similar to the one we are considering now?
>
> Mr. Campbell—I have not.

Among those who appeared at the hearing was Harry Fisher, president of the Mer-

chant Tailors' National Association of America, Buffalo, N. Y. Mr. Fisher qualified as an expert:

For myself personally I feel I am qualified on the wool question. I was born into the business and for some 37 or 38 years I have worked at the business myself.

Soon after that the Chairman sought information:

The Chairman—Explain what you mean by shoddy.

Mr. Fisher—We might name it "bull's-wool"—that is a common term used by ourselves. In the legitimate tailoring business, where we sell what we believe to be pure wool, we have the clippings, the remnants of the suit left, and we save and sell them for approximately 6 cents a pound. That stuff is taken down to these various mills and put through a process like a teazle, and they tear it all apart, assort it in colors, so they get a conglomeration of colors, and those are inter-woven with cotton, linen and other stuff which makes the so-called shoddy cloth.

Congressman Decker, who is from Missouri, asked about another branch of wool manufacturing:

Mr. Decker—What is worsted?

Mr. Fisher—Worsted is the long wool which drags on the ground. That is the most expensive of the whole fleece; that is the wool out of which we make the very fine evening dress clothes and your black Prince Albert. The back of the sheep is the short wool, and that is used for making such as vicunas and lamb's wools, as we call them, short wools, but very beautiful garments, and very expensive; and I understand they are using it in the manufacture of very fine blankets.

Mr. Fisher was very confident as to the method of marking wool goods:

We maintain that the goods outside of the suit should be stated on the bolt, or it can be put on the selvage, can be woven into the selvage, can be printed on it by an indelible stamp or some kind of paint, whatever they use on the best of goods, stating the component parts of a yard of cloth. That is all we ask for. There can be no sound argument advanced against that kind of a process.

The Chairman—Can that be done so as not to disfigure the cloth on the right side?

Mr. Fisher—Yes, sir. I can take a Clay coating and have the coat made up and fitted, and if my lines are open at the bottom and you want to see the goods and ask "What is this goods?" I can turn the coat inside out and show that stamp stuck on the back of it, so you would know all about it.

A few minutes after he had told the Committee how easy it would be to label wool goods, Mr. Fisher made the following admission, showing plainly the confused and conflicting ideas concerning the question on which he was posing as an expert:

Mr. Goeke—I believe you stated about European countries being far in advance of us in this matter?

The Chairman—Mr. Campbell did.

Mr. Fisher—If he did, I can answer you.

Mr. Goeke—Are you familiar with their methods in stamping these goods?

Mr. Fisher—Yes, sir.

Mr. Goeke—How is it done in Germany?

Mr. Fisher—The same way I tell you; by a stencil put on the goods.

Mr. Lafferty—You refer now to suitings?

Mr. Fisher—I refer to anything the tailors use.

Mr. Lafferty—Yes, tailoring materials?

Mr. Fisher—Tailoring materials; yes, sir.

Mr. Lafferty—I have seen the stamp of Clay

Mr. Goeke—That is the name of the manufacturer?

Mr. Fisher—Yes, sir. The thing which troubles me is to find out the most effective way of advising the public of the ingredients in the articles offered for sale.

Mr. Lafferty—The Clay does not do that?

Mr. Fisher—No; I agree with you on that.

The extracts we have given illustrate the grasp Mr. Fisher has on the subject concerning which he undertook to instruct the Committee. Although rather more amusing, they are not a whit more absurd than the ideas advanced by the framers of these "pure textile" bills.

HOME MARKET CLUB

On Tuesday afternoon, December 23, a luncheon to the officers of the Home Market Club was given at the University Club by President William B. H. Dowse. There were present representatives of the leading New England industries and interesting remarks were made by President Dowse, Congressman Calvin D. Paige, Colonel S. O. Bigney of Attleboro, C. B. Smith of Fitchburg, Channing Smith of Cherry Valley, a member of the Massachusetts Board of Industries and Labor; James R. MacColl of Providence, George A. Draper of Hopedale, Col. William H. Bent of Taunton and John Hopewell of Boston.

Thomas O. Marvin was reelected secretary and D. Webster Dixon, treasurer.

The following resolution was adopted:

Resolved: That the country is to be congratulated on the evidence recently furnished that the Administration is disposed to give due heed to the danger signals in the business world, and that

an attitude of cooperation with the business interests of the country is to be adopted instead of a policy of oppression. Radical tendencies in legislation have gone to the full limit of the country's endurance. The tariff legislation subjected our manufacturers to a burden which they are bravely endeavoring to bear, and it will be due to their skill and enterprise and to the cooperation and efficiency of our workingmen if consequences of a more serious nature than those which have already brought distress and alarm in many manufacturing centers are not multiplied, until disaster spreads throughout the nation.

That the President is keenly alive to the danger confronting American business, is a source of congratulation, and we are glad to pledge our best efforts to the maintenance of our manufacturing supremacy and the revival of national prosperity.

To this end we earnestly recommend that the Government exercise every safeguard to prevent undervaluation of imports and that steps be taken immediately to change such customs duties as are manifestly inadequate to afford our manufacturers and workingmen ample protection to offset the difference in competitive conditions here and abroad in all productive enterprises.

Business in Woolen and Worsted Mills

The National Association of Wool Manufacturers has made a canvass of the woolen and worsted mills of the country to determine the proportion of machinery idle on December 1. The results of the inquiry were given to the trade in the following circular letter, which stated that the association intended to canvass the mills and report the condition every three months in order to keep the trade informed:

DEAR SIR:—Below is summary of the results of our inquiry as to the machinery active and idle on Dec. 1, 1913, in the woolen mills of the United States.

Machinery	Total No. reported	Dec. 1, 1913 — Working.	Idle	Per cent., idle to total.
Looms, wider than 50-inch, reed space	39,254	29,471	9,783	24.9
Looms, 50 in. reed space, or less	11,984	8,722	3,262	27.2
Looms, carpet	2,683	1,821	862	32.1
Woolen cards, sets	2,915	2,292	623	21.4
Worsted combs	1,717	1,320	397	23.1
Woolen spinning spindles	906,250	700,306	205,944	22.7
Worsted spinning spindles	1,592,c04	1,178,815	413,189	26.0

A majority of all the mills have responded, and the replies represent a very great majority of all the woolen machinery of the country. Some mills in answering, have given, not the number of looms, spindles, etc., asked for, but only the per cent. of their machinery idle or active. These, of course, could not be included in the returns.

In about three months another inquiry will be made, and regularly once a quarter thereafter—the results, as in this instance, being promptly published for the information of the industry as a whole.

Sincerely yours,

Boston, Dec. 20, 1913. WINTHROP L. MARVIN, *Secretary.*

There are no statistics of woolen and worsted machinery in the United States on the date of this canvass, but the following table shows the census of 1909 compared with the returns included in the above report, the woolen cards being omitted because the U. S. census includes shoddy cards in the statement along with woolen cards:

Machinery	Census 1909	Canvass 1912
Looms, broad and narrow	72,899	51,238
Looms, carpet	10,032	2,683
Worsted combs	1,978	1,717
Woolen spindles	1,814,668	906,250
Worsted spindles	1,655,400	1,592,004

The canvass of idle woolen and worsted machinery is especially interesting at this time owing to the new tariff's going into effect on January 1. Possibly the statistics were compiled because of that fact. Five years ago we made a like canvass of the woolen and worsted mills of New England, exclusive of carpet mills. The returns covered, with a very few exceptions, all of the woolen and worsted mills in this section, the report being for the last two weeks of December, 1908. That was just before the tariff revision of 1909, and it may be of interest to compare the results, which were published in our January, 1909, issue, with the canvass just made public for December, 1908. The New England figures for December, 1908, were as follows, the number of woolen cards being considerably in excess of the number included in the canvass of the National Association of Wool Manufacturers:

Number of mills idle in New England	80
Number of mills in partial operation	132
Number of mills in full operation	295
Number of mills running overtime	29
	536

Woolen

Number of sets wool cards in New England	3,594
Number of sets idle (in idle and partially idle mills)	1,414
Percentage idle cards	39.4%
Number of looms on wool goods	23,702
Number of looms idle	8,489
Percentage of idle looms on wool goods	35.9%

Worsted	
Number of combs in New England	1,277
Number idle	43
Percentage of idle combs	3.37%
Number of looms on worsted goods ...	33,918
Number of looms on worsted goods idle	3,338
Percentage of idle looms on worsted goods	9.8%

THE WOOL GOODS MARKET

New York, Dec. 31, 1913.

The all absorbing question regarding the wool goods situation is whether the domestic manufacturers or the foreigners are to get the larger percentage of sales on the coming season's business. From what can be learned at the present time it seems that a large proportion of the sales on low grade serges is going to foreign mills. This is especially true of serges selling below 70 to 72 1/2 cents regular terms, as this is the lowest price for domestic goods. The foreign made serges run as low as 55 cents net 30 days, duty paid, for goods weighing 8 1/2 ounces. Goods of this weight and one ounce heavier, the latter at 57 1/2 cents, are used largely for youths' and children's clothing.

It is probable that the foreign business will be done principally on staple fabrics as the situation is very different on fancy fabrics. A number of clothiers have said they cannot buy foreign fancy styles on account of the difficulty of getting them on duplicate orders in small quantities and on comparatively short time. Some buyers have suggested that foreign manufacturers should make up stocks of fancy styles, which have been or will be well distributed on initial orders, and hold them here for duplicate business. That, however, is a suicidal policy as in making styles on speculation a number of them will, in all probability, not be called for, and invariably have to be, sold from stock at ruinous prices for the manufacturers. Styles not taken on duplicate order practically have "undesirable" stamped on them.

Staple styles or fabrics can safely be made in advance of repeat orders and it is probable that foreign goods will be so made. That fact will enable buyers to get duplicate quantities of such goods on short notice.

Low priced three-quarter goods were opened at last year's prices, in most cases, some slightly lower, and the goods are being sold quite freely on properly styled lines. It may seem strange that, with the great cut in the tariff, goods can be sold at old prices. There is so little wool in them that the tariff or free wool does not have any effect on their value.

Medium priced all wool or worsted fabrics are being sold at various discounts from last year's figures. The apparent reductions under the new tariff are from ten to fifteen per cent. Later when more of similar fabrics, both foreign and domestic, are offered, the decline may be more marked, it will depend upon how badly the foreigners want the business. When they become more familiar with our loose ways of doing the woolen business, many of them may decide that they do not care for business that involves such unmercantile practices.

The order business on low grade fancy fabrics seem to be settled largely in favor of our home mills as a number of makes have been sold freely, probably with little profit to the mills, which, however, are making sure of the business to keep their plants in full operation.

It is believed that foreign mills cannot meet the competition on a number of lines which are meeting with great success, as some of them are great values for the prices. Probably the best values offered are chinchillas made all wool and sold at $1.10 regular terms, they have been sold very freely and probably cannot be placed on the market by competing mills at the same price. This shows what great advantages some manufacturers have over others. These goods have created a sensation in the woolen district.

The finer makes of goods which are sold to the jobbers for tailoring trade and for the finest makes of clothing will not be opened for several weeks, consequently it is not known how their sales may be affected by

foreign competition. It is quite likely that the well known makes will hold their trade.

It is apparent that many mills are depending upon getting out new fabrics with novelty styles which will take them out of competition with foreign makes. They feel this can be done to a certain extent and it no doubt will be done.

Home and Foreign Values of Colored Cotton Cloths

BY LANCASHIRE LADD

Manchester, Eng., Dec. 23, 1913.

The Underwood Tariff dispensation with its ad valorem basis for duty and its references to the value of goods in the markets of the country of origin lends the question of foreign value an increased importance to producers in America. There may be a doubt of what is meant by "markets of the country". Evidently a country may have a double sort of market; for example, a market in cloths made but not worn within that country; and again a market in articles for home consumption. The market may be one in time and place and be divided according to the desires of different buyers. To select a specific case, take Manchester, which is a market for all or any kinds of cotton, cotton yarns or cotton goods, upon which buyers representing all countries attend. Upon the Royal Exchange there is a market at least as free and open in goods that are particularly never consumed at home, as in cloths made expressly for home consumption. Such difference as there is in freedom and openness is in favor of the export goods, in which business is generally done upon the floor of the Exchange, whereas the home trade transactions are largely negotiated inside the home-trade warehouses.

The Manchester market is not simply one of the principal markets in its own country, it is the principal market for cotton goods in the world. Its transactions are described and recorded in print and every week the principal Manchester papers quote current prices for the chief counts of yarn and the more important staple cloths. A typical statement is given of prices ruling in the last week of November:

Yarns

	Per lb. d.		d.
Mule Twist Cops:			
32s	10¼	to	10⅝
40s	11½	to	12½
Mule Twist Cops (Am.):			
50s	13	to	15
Mule Twist Cops (Egypt.):			
50s	16	to	17
60s	17¼	to	18¾
Weft:			
16s	8½	to	9½
40s	10¼	to	10¾
50s	11¼	to	12
60s	13½	to	14½
Weft (Egypt.):			
32s	18¼	to	19¼
Water Twist Bundles:			
20s	10	to	10⅜
30s	10¾	to	12
Mule Bundles:			
40s	11	to	12

Cloth In. Yds.	Reed	Nos. of Yarn. Pick	Weight.	*Per Piece. s. d.		s. d.
Shirtings:						
35..38	..16	× 14..	8¼ lb.	6 10	to	8 2
35..38	..17	× 16..	9¼ lb.	7 1	to	9 0
38..38½	..15	× 14..	8¼ lb.	6 9	to	8 1
39..38½	..16	× 15..	8¼ lb.	7 1	to	8 7
38..38½	..18	× 16..10	lb.	8 4½	to	9 3½
38..38½	..17½	× 17..10	lb.	8 4	to	8 10
45..38½	..15	× 12.. 9	lb.	7 3½	to	7 11½
45..38½	..16	× 15.. 9	lb.	7 6	to	9 3½
Drills:						
30..40		14	lb.	10 1½	to	11 1½
Jacconets:						
40..22	..16	× 14..40s-50s	...	4 1½	to	4 3
44..22	..16	× 14..40s-50s	...	4 4½	to	4 6
42..20	..17	× 16..40s-50s	...	4 0	to	4 3
42..20	..20	× 18..40s-50s	...	5 0	to	5 3
Mexican:						
32..24	..18	× 18.. 7	lb.	6 1	to	6 3
Printers:						
32.125	..17	× 17..32s-40s	...	20 4½	to	20 10½
36..50	..19	× 22..11¾	lb.	14 1½	to	14 4½
Sheetings:						
36..40		12	lb.	10 7½	to	11 7½

*Nominal.

Probably very few of these cloths are bought to an appreciable extent for home consumption, but the values and transactions are no less real upon that account. The British cotton industry is carried on predominantly for export and although perfect exactitude in determining the proportions of home and foreign business is not to be attained, a good enough idea can be had from the statistics of production taken conjointly with those of export at the same period. It seems that in 1907 some 7,029,622,000 yards of cotton cloth were woven in the United Kingdom and 6,298,040,500 yards were exported in the same year. Allowing that the balance roughly denotes the extent of the home consumption, we arrive at a figure of

731 million yards or broadly 14 per cent. of the product of the looms. Expressed in another way, for every yard of cotton cloth consumed at home six yards are exported. It is not practicable to go very deeply into the quantities of a sort, but the census gave the quantities of each kind as unbleached, 6,418 million yards, bleached, 5 million yards, and colored, 606 million yards.

The export returns gave:

Unbleached, million yards	2.133
Bleached	1.769
Printed	1.207
Dyed	1.188

The data do not disclose the nature of the cloths kept for home consumption and the apparent inconsistency in the figures is easily understood when it is realized that the particulars of production refer to goods in the woven state, or in that state to which the weaving manufacturer has advanced them. The details of export refer to the same cloth after it has passed through the hands of commission bleachers, printers, dyers and merchants. There are no official figures to show the quantities of cloths of one class retained in the home market, but quite enough has been said to show that no similarity of style, make or dimensions necessarily exists between goods made to wear in London or Wigan and those produced for West Africa, Turkey, Calcutta or Shanghai.

It is a matter of experience that the goods preferred at home are usually not identical with those made even for the wear of white people abroad. The home market inclines to more substantial goods than do the foreign markets and the trade is more difficult for a manufacturer to get into. Specialties and established makes hold the field, the number of buyers is more limited and, in general, reputation counts for more in home trade than in shipping circles. There are of course specialties made for export, and prestige and the proprietorship of known trade marks go for something in that direction also, but in a broad sense the home trade is the more select of the two.

In consequence, when one is asked what is the price in the home market of a British made cotton fabric that has been found in a foreign country the answer must very often be that there are no dealings. Suitable as the article may seem to be in every way for English sale, there remain the predilections and prejudices which operate to sell something else, usually of a heavier character. Level comparison must be frequently and even usually impossible, but it is not beyond possibility to give a notion of business practice in the English home trade in cottons. For this purpose two sets of samples have been obtained and in order that there may be no ambiguity about the facts, samples have been chosen of fabrics of well known make which are sold at fixed and maintained prices. The manufacturers sell these cloths to wholesale merchants who keep a stock on hand and supply in smaller parcels to the retailers or drapers.

The manufacturer prescribes the minimum prices for resale and these prices are prominently printed upon the sample books. There is then no room for error as to what these prices are, although there may be a margin of doubt as to how far the prices and profits are representative of the trade at large. We are dealing with branded and advertised goods and to help to make branded cloths more acceptable to merchants and drapers the owners of the brands arrange good profits for their allies. Thus the cloths sold under the name "Tobralco" are put up in books with this inscription upon the cover:

"Tobralco"—(As Advertised)

27-8 inch	30 yds. per piece
Self White	7d. per yard
Colored and Printed	7⅝d. per yard

Tobralco is offered to the retail trade at above prices only on condition that it is sold at the advertised prices per yard, viz:

Self White	9¼d.
Colored and Printed	10¼d.

Special Note—All Colored and Printed "Tobralco" are Guaranteed Absolutely Fast.

The figures given first show the rates at which the goods are wholesaled and the second set of prices are those to be charged to the public. The prices received by the manufacturer, merchant (jobber) and retailer are shown in the following summary in which cents have been substituted for pence:

Tobralco:	Mfr.	Merchant	Retailer
White ..... cents	12	14	19½
Colored and Printed	13	15¼	21½

The wholesaler is given profits of 16 2/3 per cent. upon cost in the first case and of 17 1/3 per cent. in the second. The retailer is given 39 1/3 per cent. and 41 per cent. respectively. These profits are high, for retailers reckon normally on average profits of 33 1/3 per cent. on cost, or 25 per cent. upon returns. As has been said already, part of the argument in favor of Tobralco goods is that they carry a good profit—a better one than is to be obtained in an ordinary way when competition is unlimited. The goods are bought by the wholesaler on monthly terms less 2 1/2 per cent. discount. The wholesaler is restricted in the matter of discount and cannot give more than 2 1/2 per cent., but he is free in the matter of time. The time allowed to retail drapers varies, but a system of two months' payment after two months' date is usual, so that the wholesaler gives in practice about four months.

Examination of another set of samples and of prices throws some further light upon home trade conditions in England and illustrates the variation in profits. The goods are blouse and suit novelties for 1913-14, manufactured by a leading Manchester house and they represent a class of fabrics that have largely replaced worsted and woolen for making warm shirt blouses for workingwomen. Millions of dozens of blouses from cloths of the cheaper type have been sold in the working class districts, and even if the articles are quite unsuitable for America the details at least show how English home business is done. The prices received by the manufacturer, merchant (jobber) and retailer are given in cents for the various cloths:

	Mfr.	Merchant	Retail
27 in. Dunkeld ..... cents	6⅞	7¾	9½
27 in. Nipper	7¾	9	11½
27 in. Fenella	8½	9¾	13½
27 in. Pomona	8½	9¾	13½
27 in. Peeress	9½	11	13½
27 in. Golf	10	11½	15½
28 in. Boudoir	23	27	37
27 in. Spartan	11¼	13	17½
27 in. Bridge	15	16¾	25
27 in. Super Corduroy	18½	21¾	31
38-39 in. Juno Suiting	21½	25½	37

The profit reserved for the merchant (jobber) is lowest on the low-priced goods. Beginning at 12 3/4 per cent. on Dunkeld, it rises gradually up to about 18 1/2 per cent. on Juno. The same progression is to be observed in retail profits which begin at 22 1/2 per cent. and end at a fraction over 45 per cent. on the highest class of goods. The retail profits are cut lowest on Dunkeld & Peeress, on which the prices are squeezed so that they shall come in at the popular limits of 4 3/4 and 6 3/4 pence (9 1/2 and 13 1/2 cents) respectively.

The selling expenses of wholesale merchants are generally brought down to 6 per cent., on the top of which are warehouse and general expenses and the cost of bad debts. Retailers' expenses are a great deal of a mystery and vary with circumstances, but they can be placed at 12 1/2 to 17 1/2 per cent. It has been shown that different rates of profit are taken upon different branded articles and the case is similar with cloths not bearing a trade mark. Prices are cut upon showy, cheap goods and a better rate of return is sought on sound substantial stuff. For instance, a class of gingham cloth, Fig. 19, largely used for making household aprons, sold at 9 cents wholesale, is sold at 13 cents to the public and bought from the mill at 7 3/4 cents. The ginghams sold in England are chiefly used for aprons and are twice the weight of many ginghams made for export. There are other designs, but the favorite one is shepherd's check in black and white, blue and white or red and white. Great attention is paid to fastness of color, as the apron is expected to stand up well to weekly washings.

The standard make of home trade gingham is Hoyle's, of which probably little is exported except to British colonies through the export departments of merchants whose first concern is with home trade. A valid distinction may be drawn between markets like the Australian and South African and the export markets at large. These and some less important places share British tastes in many matters and take up a proportion of the home-trade stock left on hand at the end of the English season.

The conditions under which export business is done vary with the markets and the quantities. Merchants known as shippers

handle most of the goods and some of the cotton sold abroad pass through the hands of Manchester shippers, who undertake the supervision of the technical matters and then through London shippers whose business is rather with finance and transportation. This is largely the case with goods going to the East, when the Londoner is very often the European branch of the importing house abroad. Trade, for example, with the Near East and South America is done generally through Manchester houses alone, who are sometimes the English branch of international importers, or otherwise the providers of credit to the foreigner. In some markets difference of language or the complexities and uncertainties of credit interpose a bar between the British manufacturer and the importer oversea. For a long time exportation to the United States has been tending to become more direct. The buying is done largely by visiting American buyers who enter into direct treaty with the larger and better known manufacturers and buy from smaller men through the agency of commission houses. The smaller commission houses keep no regular stock of goods, but the larger ones make contracts for plain goods for stock when prices are favorable and by anticipating the market successfully can occasionally undersell manufacturers.

Many of the manufacturers doing a direct trade with America buy from other manufacturers a few of the goods they sell, while making their own specialties in their own mills. As export merchants do not come freely to manufacturers who are known to trade direct, these last are the more inclined to merchant other goods beside their own and the goods they resell are usually produced by manufacturers much smaller than themselves. Whether the intermediary calls himself manufacturer or merchant is immaterial to the case. The main fact is that the American importer ordinarily buys at the manufacturer's price or at this price with 2 per cent. commission added. The goods bought have usually some other market than the American, although this alternative market is not necessarily the British home market. The cloth in point (perhaps in different colors and designs) may have a sale in Asia, South America, Australia or on the continent of Europe. On the basis of probabilities any exported cotton fabric is more likely to have its principal market abroad than at home.

Samples of the cloths to which "Lancashire Ladd" refers can be seen at our Boston office. We have analyzed seven of the Tobralco cloths, eleven of the blouse and suit novelties, and the gingham with the following results:

Tobralco

Sample	Warp		Filling		Sq. yds. per lb.
1	85E	45s	76P	30s	5.3
2	80E	38s	74P	31s	5.18
3	76E	33s	108P	57s	5.55
4	87E	43s	77P	32s	5.3
5	90E	45s	77P	36s	5.42
6	105E	53s	78P	30s	5.37
7	81E	37s	74P	32s	5.18
	Blouse and Suit Novelties				
8	73E	32s	47P	27s	5.83
9	56E	21s	36P	12s	4.24
10	49E	23s	36P	7s	3.33
11	53E	18s	61P	27s	4.49
12	52E	21s	36P	7s	3.15
13	73E	22s	53P	14s	3.38
14	81E	2/28s	50P	14s	2.4
15	82E	25s	52P	19s	3.88
16	73E	24s	49P	16s	3.81
17	108E	23s	82P	34s	3.33
18	60E	12s	71P	19s	2.65
	Gingham				
19	73E	22s	69P	29s	4.02

AMENDMENT TO THE KAHN LAW

Representative Bulkley, of Ohio, has introduced in the House of Representatives a bill to amend the objectionable sections of the Kahn Bill which, while offering adequate protection to the foreign exhibitors at the Panama Pacific Exposition, at the same time protects the interests of American manufacturers, merchants and importers, which might have been seriously impaired by the loosely drawn and improperly worded Kahn Law.

The National Design Registration League hopes that manufacturers and others interested will do all in their power to favor the passage of this amendment and will be glad to send copies of the bill to any who are interested.

Correspondence and Notes

UPON TEXTILE TOPICS AT HOME AND ABROAD

"POLYREFLETS" PLUSH

BY ROBERT DANTZER

Translated from the French by the Editor of the Textile World Record.

The plush known in France as "polyreflets" is woven like the ordinary plain plush fabric, but exhibits clearly defined patterns produced by the inclination of the pile at different angles. This causes the light to be reflected in different directions, producing a very pronounced effect. The process is the invention of M. M. Leroux freres, of Roubaix and Amiens (French patent 439.832, April 6, 1911) and has met with success from its first appearance.

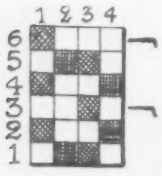


FIG. 1

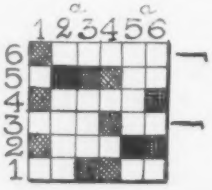


FIG. 4

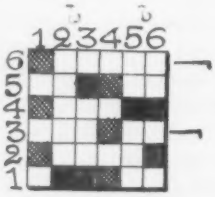


FIG. 5

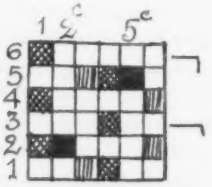


FIG. 12

The inclination of the pile, first at one angle and then at another, according to the requirements of the pattern, is obtained by the use of a special warp which is woven under tension greater than that of the ground warp. This method of manufacture is applicable to all kinds of velvet and plush, but up to the present time has been confined chiefly to mohair plush called "velours d'Utrecht," used for upholstery. The method can be easily adapted to silk plush for dress goods and to other pile fabrics woven single with wire or double without wire. I will explain the new method as it is applied in the manufacture of "velours d'Utrecht".

FIG. 3

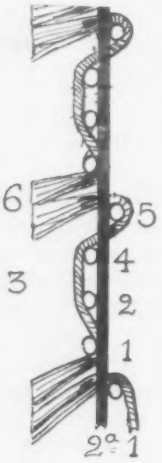


FIG. 7

FIG. 8

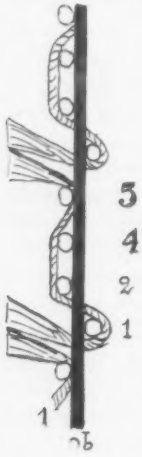


FIG. 9

FIG. 11

FIG. 10

The weave for the ordinary fabric is shown at Fig. 1, in which threads 1 and 3 are for the pile warp, and threads 2 and 4

for the ground threads. The filling is woven 2 picks, 1 pile wire. Fig. 2 is a plan; Fig. 3 a section of the same fabric. In this cloth the pile threads are either upright or inclined slightly to the right. The pile warp is stitched on four picks, the tufts being arranged in a quincunx order. Fig. 4 shows the same weave as Fig. 1 with extra warp threads, 2 and 5, added. In this weave the tension threads rise over the pick which precedes the passage of the pile wire. Thus thread 2a rises over pick 5a, preceding pile wire 6, which raises the pile warp thread, 1a.

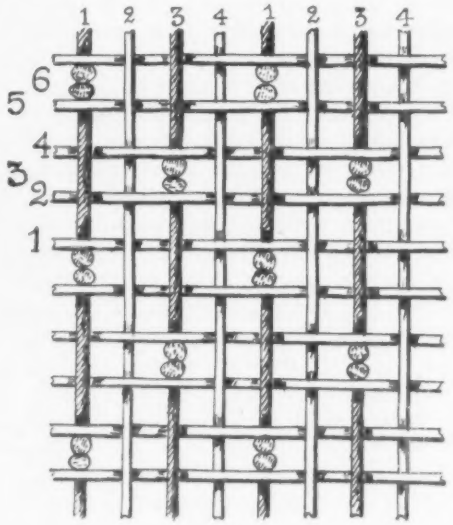


FIG. 2

In the same manner thread 5a rises above pick, 2, and before the wire reed, 3, which raises the pile warp thread, 4. The weave draft at Fig. 5 is similar to Fig. 4 except that the tension warp thread rises above the pick following the pile wire. Thus thread 2b rises above pick, 1, which follows pile wire, 6. Thread 5b rises above pick 4 which follows pile wire, 3. The supplementary threads, 2a, 2b, 5a and 5b, should be perfectly straight, free from any curvature, as shown in Figs. 7, 8, 9 and 10.

Fig. 6 shows the plan of the new fabric with the tension threads added corresponding to sections, Figs. 7 to 10. Figs. 7 and 8 show the tufts inclined backward, this inclination being caused by the drawing down of picks, 5, for the pile thread, 1, and picks, 2, for the pile thread, 3. The profiles, Figs. 9 and 10, correspond to Fig. 6 and show the tufts inclined forwards, this being produced by the drawing down of the picks, 1 and 4,

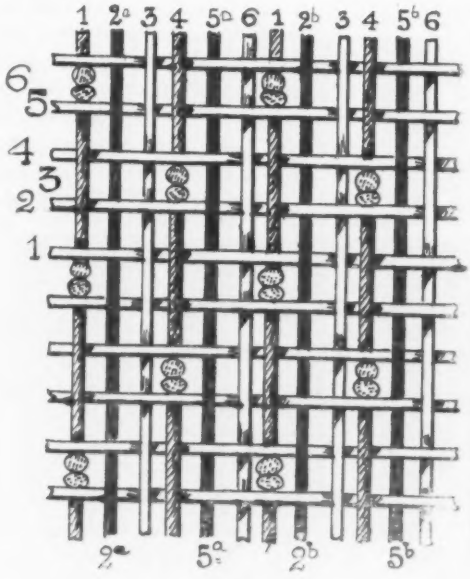


FIG. 6

by the tension threads, 2b and 5b. The tufts can be left perpendicular as shown at Fig. 11, by having the tension threads woven as shown at Fig. 12.

From this description it will readily be seen that the process is comparatively simple and that "velours d'Utrecht" can be

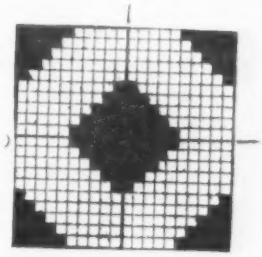


FIG. 14

made with a pattern produced, for example, by inclining the tufts forward or backward as desired, with part of them in the normal perpendicular position.

Fig. 14 shows the motif of a fancy velvet known as "compte ferme," which is warped as follows: 1 pile thread, 1 tension hread, 1 ground thread. Fig. 14 is made with a pattern six times as large as the lines in the motif (20 × 6 = 120 threads). The pattern is woven with 2 picks for each wire reed, the complete design covering (20 × 6) 120 picks or rather 80 picks and 40 pile wires. Fig. 15 shows one-quarter of the weave pattern for Fig. 14, all the warp threads and picks being shown. This weave is called "compte ouvert" to distinguish it from the one al-

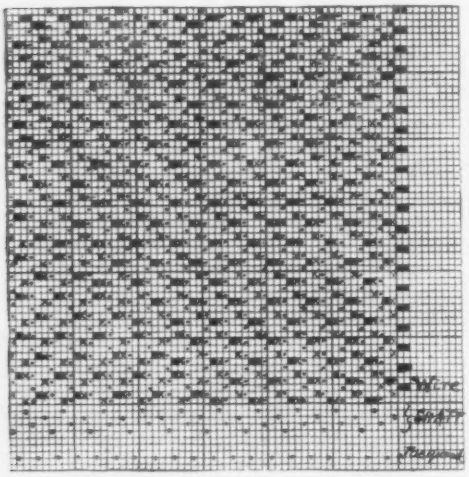


FIG. 15

ready described. This is the design that would be made if one analyzed a sample. As shown by Fig. 15 two harnesses are used for the ground threads and 2 for the pile threads. The tension threads are operated by a jacquard mechanism. In mounting the loom one or two beams are used for the pile warp, one for the ground warp, and one for the straight warp under high tension. I am sending you a sample of the finished goods. (This can be seen at our Boston office.)

—÷—

The American statistics for 1912 show an exportation to China of 69,766,738 yards (or $4,620,276 worth) of cotton cloth in 1912. against 110,163,246 yards (valued at $7,567,334) in 1911 and 65,506,099 yards (valued at $4,151,340) in 1910.

ENGLISH NOTES

Bradford, Eng., Dec. 22, 1913.

The editorial upon "The Average Yarn Number for the Underwood Cotton Cloth Tariff" contained in the October issue of this magazine, proved to be the first means of directing Lancashire's attention to the fact that the average number was the basis of the duties upon cloth. Extracts from this article were published upon this side and there were immediate inquiries as to where the article could be seen in full. It was quickly realized that the averaging was of importance, especially to the trade in cotton prints. Printers' cloth is woven usually with a warp coarser than the filling and the bulk of the trade is done in goods of 36s twist and 50s filling. The chief cloth of all is nominally 32 in. wide 116 yds. (of 36 1/2 ins.) 16 by 16 36/50s. This is the typical Burnley "lump". An analysis of the cost of weaving this cloth is taken from the "Cotton Yarn Book" and although the prices of yarn are not necessarily those of the day the statement gives a good idea of the normal cost of production:

Nominal Actual			
Width and Length			
32"/116 L. S.			
32"/116 L. S.			
Reed and Pick			
16 × 16			
15 × 15			
Yarns			
32 T/50 W			
36 T/54 W			
	lbs.	cents	cents
Twist	7.90	at 23¼	183.68
Filling	5.29	at 25½	134.88
Waste			9.56
Wages, A, Weaving			65.
B, Preparation			16.24
C, Day wages			9.74
Interest Depreciation			7.14
Rates, Taxes, Insurance			1.94
Fuel, Light, Water			3.88
Stores, Repairs			9.74
Carriage			2.6
Per Piece			444.40

Another printing cloth in which there are large transactions is particularized as follows: 32 ins. × 125 yds. × 17 reed × 17 pick × 32/40s yarn. A third standard make is quoted as follows: 36 ins. × 50 yds. ×

19 reed × 22 pick × 11 3/4 lb. To some extent such goods are woven by calico printing firms, but more generally by independent manufacturers who buy yarn and sell the goods in the gray to those parties who send the pieces out to print. Automatic looms are used to a limited extent in the production, but the 200-pick Lancashire loom is the usual machine and probably there are not fewer than 100,000 looms engaged upon such goods.

* * *

A table that has been worked out by the Manchester Testing House for ready reference in testing the condition of cotton may be taken to exhibit the extremes of dryness and moisture ordinarily met with in practice. The table begins with cotton which on prolonged heating loses 6.25 per cent. of its weight, as against the permissible 7.834 per cent. This may stand for an uncommonly dry sample. The circumstances of the case ensures that the establishment shall receive more samples that are too wet and at its other end the table relates to cotton losing as much as 16.21 per cent. When cotton yarn is in the spinning room and "absolutely dry" according to the judgment of the spinner, it has been demonstrated to hold usually from 3 1/2 to 7 1/2 per cent. of moisture. Left exposed, cotton always tends to reflect the surrounding conditions. If too dry it gains moisture in correspondence with the humidity of the atmosphere and if too wet it loses moisture, and at warm temperatures develops mildew. This tendency to mildew is a safeguard as well as a nuisance and it prevents cotton from being wetted with the same impunity as wool. The standard 8 1/2 per cent. regain for cotton is quite a different one from the 14 to 19 per cent. regains sanctioned upon wool noils and tops. The limits of expectation in the case of tops are indicated in the tables issued by the Bradford Conditioning House which extend as far as 20.31 per cent. of direct loss upon absolute drying.

* * *

All the advocates of new methods for making labor contented and improving its efficiency get a hearing from the Yorkshire Association of Managers of Textile Works. Business-scientists, efficiency-engineers and scientific-managers from America with apostles of labor copartnership from London come and deliver their views and enable it to be said that never were English managers more accessible to new ideas. Baden-Powell of the Boy Scouts absented himself from the last dinner which was attended by Sir George Askwith, the official conciliator-in-chief in cases of labor disputes. The high skill of Sir G. Askwith has patched up more than one textile trouble at the eleventh hour and his opinions upon the prevention of strikes and lockouts are the most authoritative of any. It is worth knowing that this man of great experience declares himself flatly against arbitration by compulsion, and holds that consent must be mutual if an agreement is to be anything but a monument to broken faith. Men highly placed in the Lancashire industry have shown some favor to the idea of compulsion, which of course carries with it the enforcement of the will of the majority of employers upon the minority within the trade. Majorities enforce their decision over minorities within the labor unions and moreover force unwilling workers into the union, but even the union leaders are opposed to State compulsion in the arbitration of disputes.

* * *

American mill men have some cause to know that English overseers sometimes seek jobs in foreign lands and the question has been asked how posts are to be obtained in the more out-of-the-way countries. The export of men is intimately connected with the export of textile machines, of which between $30,000,000 and $40,000,000 worth goes abroad yearly. Experience in the working of a particular make of machine is a great passport and employment is often got through the agency of machine-makers and supply houses. Sometimes posts are advertised in the English papers, but perhaps the most effective help is the interest of friends already established in the particular country. Trade societies make one channel for hearing of foreign jobs and it must be literally true that a body like the Bradford and Dis-

trict Spinning Overlookers' Provident Society has members in every country in which worsted is spun. There must be a large number of American-trained overseers who could, if they liked, offer prospective employers in the newer countries one substantial advantage, for they get more experience than their English equals in the training and organizing of green help.

* * *

A view put forward by a color maker at a meeting called by the Textile Institute to consider the fixing of standards for indigo dyeing perhaps has a larger backing than the discussion showed. The contention was that the general public has no interest in knowing whether 50 per cent. of indigo and 50 per cent. of another dyestuff was in the cloth; but had a great interest in knowing that the dye would wear as well as full indigo. It is upon the assumption that the customer wants fastness to light, water and mud that manufacturers of high-class cloths proceed and their usual method of satisfying themselves is to expose samples in the open for a year. Solicitude for the public interest is blended with care for the indigo interest in this matter of standards of purity and thus inquiry has been carried one stage past the bare satisfaction of reasonable expectations upon the part of the wearer. The attempt to provide improved means of estimating the percentage of indigo present in a sample dyed with mixed colors has partially succeeded. An improved extracting apparatus has been made by Professors Green and Gardner and three indigo solvents have been singled out which take little or no effect upon other colors. The solvents are dry pyridine, a cresol hydrocarbon mixture and glacial acetic acid. The indigo being removed, it remains to match its depth of shade upon the tintometer glasses. This method—it is confessed—is rather for scientific workers than for manufacturers and dealers and its authors admit that the method is hardly scientific enough to satisfy them. The indigo question is of moment only upon woolens. After finding that cottons are practically always dyed with the pure color when they are treated with indigo at all, and after learning that those great sticklers for fastness, the Government departments, wanted a faster cotton color than indigo, the Cotton Section Committee disbanded. As regards woolens, the effort towards standardization might more hopefully have been made about a generation back. As artificial colors succeeded in counterfeiting the results of the nitric acid test they could be depended on to produce dyestuffs soluble in any solvent in general use for testing.

* * *

Cloth-halls or Piece-halls to which goods when woven were taken for public exhibition and sale have long been superseded by Exchanges. Some of the old buildings exist and an apt account of the part they played in their own day may be found in the speech of Mr. Thicket "a respectable gentleman from Yorkshire" reported in the "Stocking-makers' Monitor" of 25 October 1817. Nottingham stockingers were in a regrettably bad way and Mr. Thicket told the meeting in the Bell Ann that what they required was an open market. He told of the founding of the Huddersfield Cloth Hall and of how formerly weavers had been "greatly embarrassed and run down in their prices" by manufacturers who took "cruel advantage of their necessitous circumstances," knowing them to be obliged to sell at whatever price. Weavers with means took their cloths to a distance and sold them to more advantage, but the greater part being poor and unable to travel were left to be "slaves and drudges to the monopolizing masters." Then (about 1777) Sir John Ramsden, being convinced that a public market in the central part of a manufacturing district would render essential benefits, built the Cloth Hall. Fourpence per piece was taken at the door to pay interest upon the cost and "so great and immense was the business" that in four years the cost was completely cleared and the charge was reduced one-half. Mr. Thicket was of the opinion that "even this small pittance produced money sufficient to build a town". A Mr. Swift agreed with all that Mr. Thicket had said and added that since the opening of the market prices had kept up

through the worst of times. The Nottingham stocking makers proceeded to occupy themselves with plans for a hall of their own.

WOOLEN AND WORSTED MACHINERY IN EUROPE

By Our Regular Correspondent

The only available figures to show the equipment of worsted and woolen mills in the United Kingdom fall appreciably short of the present facts of the case. Particulars are taken at irregular intervals by the factory inspection and the latest available are these for 1904. These show:

Woolen, Worsted and Shoddy		
Factories		2,382
Rag grinding machines		900
Woolen carding sets		6,700
Worsted combs		2,924
Spinning spindles, mule	2,780,565	
Other	2,844,912	
Total spindles		5,625,477
Doubling spindles		1,059,049
Power looms:		
Up to 40 in. reed	9,456	
40-60 in. reed	22,843	
60 in. reed and over	72,215	
Total looms		104,514

The number of factories must have increased as there have been more additions than withdrawals. The rag grinding trade has increased in the interim and probably the number of machines also, but the practice of night-working has increased also. The latter observation applies to woolen carding sets, of which both the number and the capacity have certainly grown. Worsted combs are run faster than ten years ago and in that space of time the trade has been largely reorganized. A number of spinners have installed combs, large commission sheds have been built and night work has been carried on more conveniently than usual during four years. The number of worsted spindles must be appreciably larger than ten years ago and it is certain that more mule spun woolen yarn is produced. Winding machinery, which is not included in the official list, is much more abundant. Narrow looms may be fewer now than in 1904, but broad looms are certainly more plentiful and their efficiency has been materially improved.

The following particulars as to German plants in 1907 are official:

	Woolen
Spinning spindles	1,956,432
Doubling spindles	23,036
Shoddy, making raw stock consumed ....lbs.	150,222,000
Looms in factories, power	63,389
Looms in factories, hand	3,203
Looms outside, power	11,017
Looms outside, hand	8,036

* Some duplication of figures for looms reported.

	Worsted
Combs, tops produced	136,735,000
Spinning spindles	2,263,364
Doubling spindles	555,705

Germany weaves much more yarn than she spins, witness the large export of crossbred and luster yarns from England.

There were said in 1909 to be in work in Belgium:

Spinning spindles, woolen	274,210
Spinning spindles, worsted	288,876
Doubling spindles	93,592

An estimate by the French Tariff Commission in 1910 gave 82,117,000 pounds as the French production of carded woolen yarn; and 110,075,000 pounds as that of worsted yarn. The following estimates of the extent of the plants which were made in 1904 and given in evidence, doubtless require substantial correction:

Combs	1,600
Spindles, worsted	2,000,000
Spindles, woolen	390,000
Looms	35,000

Wool goods are manufactured in all the larger European countries, but the obtainable data are slight. The wool mills in Russia were said to use 94,057 horse power in 1908, to have 1,037 engines, employ 148,470 persons and to number the surprising total of 1,016. In other words, there are in Russia about 340 more woolen than cotton mills, but the cotton mills have an output nearly four times as great.

Woolen and worsted manufacture employed 7,700 persons in Holland in 1899 and 10,500 in Sweden in 1901.

In the last-named year there were 53,400 woolen and worsted operatives in Austria-Hungary and 79,400 in Italy. Spain, Portugal, Switzerland, Denmark, Norway, Fin-

land, Roumania, Bulgaria, Servia and Greece all have mills, but the information as to their extent is of the scantiest and not of a character that can be assimilated with that from manufacturing countries of more importance.

French combs have a production not exceeding one-fifth of that from circle combs; spindles vary in their capacity according to their type and looms are by no means all alike in width and speed. Then in strict justice the machines that do double duty should count double.

THE EMERIZING OF FABRICS FOR DUVETYN FINISH

BY ROBERT DANTZER

Translated from the French by the Editor of the Textile World Record

The finishing process called "emerizing" is of comparatively recent origin, but since its introduction a number of manufacturers have made improvements in it with a view of producing special effects. One of these is covered by French patent No. 449,266, Dec. 18, 1911, by the Societe Dubar-Delespaul of Roubaix. The object of this process was to imitate corduroy. The inventor states that it is an application of a well known process and the patent involves no improvement in the technique of that process. The emerizing process is used generally on goods with filling weaves, that is, weaves in which the filling floats on the face and the warp on the back, such as a 4-leaf filling satin and a moleskin. This process of finishing does not require any special treatment in weaving and is equally well adapted for cotton, worsted or carded woolen fabrics. The goods are emerized either in the grey or after dyeing or printing. The goods treated by this process is similar to the skin of the mole or peau de Suede in appearance and handle. The process changes the surface of the cloth and gives it the appearance of velveteen or chamois.

The operation is very simple and consists in subjecting the cloth for two or three runs to the action of several rollers which revolve rapidly in a direction opposite to that in which the cloth is moving. These rollers are covered with emery cloth. Pulverized flint, stone, glass or sand is sometimes substituted for the emery. The action of the roller on the filling produces a very short, thick nap with the fibers standing straight from the surface of the cloth. The extent of this action depends naturally on the fabric to be finished and is regulated by the tension of the cloth, the speed and number of the rollers and on the fineness of the emery with which the rollers are covered. It is evident that carded woolen goods can be finished by this process more easily than worsteds owing to the difference in the twist of the yarn.

Emerizing differs radically from napping on the ordinary napping machine, which tears the fibers from the thread in order to form the nap. Emerizing consists not in tearing the fibers out, but in wearing or polishing the surface. Both napping and emerizing, however, serves to reduce the strength and solidity of the fabric. In order that the nap may be uniform it is necessary that the fabric possess a certain degree of solidity and stiffness. For this reason the cloth is heavily sized, which prevent the emery from penetrating deeply into the fibers. The ordinary glue used for finishing answers this purpose and before emerizing the cloth should be thoroughly dried. Cotton fabrics are treated with milk of lime or a weak solution of caustic soda. By covering the rollers with bands of emery the duvetyn finish can be produced in the form of stripes.

PASTE FOR COTTON GOODS

Editor Textile World Record:

Referring to "Finisher's" question (2250) in your December issue, a very satisfactory paste can be made from a mixture of cornstarch and Canary Dextrine, with the addition of a small amount of caustic alkali. The mixture should be thoroughly mixed with water and cooked for about 15 minutes. It can be used either cold or hot. The use of a small amount of alkali makes a more transparent paste, and prevents the paste from becoming lumpy.

Corn Products Refining Co.
17 Battery Place, New York.

PURE TEXTILES IN ENGLAND

BY WESSEX

The effective range of the British Merchandise Marks Act has been lengthened lately by a new set of regulations governing the conditions under which prosecutions may be undertaken by the Government. At any time since 1891 it has been competent for individuals or associations to approach the Board of Trade with a request that this Government Department should undertake the prosecution of an offending trader. The Board was at liberty, subject to its own discretion, to undertake the conduct of the case and the solicitor to the Board has appeared in court to prosecute most of the individuals who have been convicted of applying false trade descriptions to textiles. Hitherto it has been necessary for the instigators of proceedings to produce all the evidence necessary to secure a conviction. Under the amended rules the Board may, if it sees fit, obtain the necessary evidence through its own agents. The effect ought to be to facilitate action against offenders as damning evidence is not always easy to get, nor is the position of the informer always a pleasant one.

To this extent the change satisfies trade opinion as expressed through the Chamber of Commerce, but the regulations are not regarded as perfect. The Board has been asked to relieve applicants of the necessity of finding security for costs, to allow applicants to limit the amount for which they will become liable and to permit them to close an action before judgment has been given. To none of these proposals does the Board assent, although in terms of the 1891 amendment Act the expenses of prosecutions may be defrayed out of funds provided by Parliament. The refusal means that information cannot be effectively laid unless the person or the body is prepared to accept a risk which may prove a large one even in the event of a successful verdict. If the loser is unable to meet the costs the burden falls upon the winner and some of the hearings have been protracted ones and have then gone to appeal. As the Board is only empowered to undertake cases when the general interests of the country or of a section of the community, or a trade are at stake, the proposals put forward are more reasonable than if official prosecutions could be engineered simply out of spite. So far as the Act is concerned the broad disposition is to make it more operative rather than less.

It is already well known that the Act deals with "every person who applies any false trade descriptions" unless he can prove that he acted without intention to defraud. It defines "trade description" as any statement direct or indirect, (a) as to the number, quantity, etc., of goods, (b) as to the place in which goods were made, (c) as to the mode of manufacturing, (d) as to the material of which goods are composed, (e) as to goods being subject to an existing patent or copyright. The details are comprehensive and it will be observed that a way is left clear to make the measure more searching.

In the case (d) "as to the material of which any goods are composed," something is left to interpretation and it has, for instance, already been decided that mixtures of wool and cotton may justifiably be described as "woolen," but not as "all wool." A description may at the same time be legitimate and misleading, for there is no room to doubt that an article with a foundation of silk may legitimately be labelled "silk" even if its constitution is three parts tin and iron. Of course if new standard descriptions could be created the old Act would become operative upon the new descriptions.

It is in view of this fact that the following resolution was recently adopted by a body of manufacturers and distributors of silk goods:

> That, in the opinion of the Council of the Silk Association of Great Britain and Ireland, the time has arrived when, in the interests of the purchasing public and of the honest description of goods, all fabrics purporting to be silk, and silk goods mixed with other fibers, should be graded according to their purity, and, subject to certain standards to be legalized, defining such quality in degrees of purity analogous to the carat standard for gold; and that there should be, for instance, agreed standards as to pure silk, standard silk, silk and weighted silk, with degrees of weighting.

The opinion has been set upon record and meetings have been held to discuss the details, but the ultimate form of the standardi-

zation proposed has not yet been arrived at and probably will not be for several months. The project has the sympathy of silk spinners of the few silk throwsters who survive in this country and it certainly has the support of some manufacturers of woven goods.

President Warner, of the Silk Association, referred as follows to this question at a joint meeting of the Silk Association and Silk Club:

> No one had a word to say against pure silk. Silk that was reasonably charged with some weighting matter was, in his opinion, in many respects none the worse—in some colors, such as black, it was rather the better—and it certainly had the merit that it brought within reach of large masses of the population the opportunity of buying silk which they otherwise would not get. The excessive adulteration of silk, however, led to decomposition at a very early stage of the use of the fabric and it was that that they had to consider and, if possible, to deal with. This adulteration was carried too far and led to fabrics falling to pieces in a few days. Whatever advantage there was in it to the dyer and shopkeeper, the spinners and merchants could not allow it to go on. (Applause.)

The measures proposed have the object of maintaining the good name of silk and of preserving it from the discredit brought upon the article by the sale of goods that create lively dissatisfaction in wear. For the object much may be said. Judgment can hardly be formed upon the proposed methods in the absence of the complete scheme. It may yet be deemed that classification into "pure silk, standard silk, silk and weighted silk" is unnecessarily cumbrous. Evidently the certification, sealing or inspection would be expensive. Certainly the labelling would be awkward to effect and troublesome to supervise. The practical objections are not less in this instance than in that of some "pure textile" restrictions that have been proposed in the United States. The practical outcome would not inevitably be beneficial, for rather than court so much trouble manufacturers and shopkeepers might decide not to describe silks at all, thus leaving purchasers to their own judgments. It is easier to interfere than to foresee the results of intervention and it could not be much satisfaction to silk manufacturers and spinners to curtail the employment of silk to prevent an occasional gull from being deluded.

THE MANUFACTURE OF ELASTIC FABRICS

BY SAMUEL BROWN

(Continued from November.)

We will now study the various types of fancy effects available for the elaboration of double cloth, elastic webs. The most common is the warp stitch figure, in which every conceivable form of design and variety of color may be used.

It is not my purpose here to particularize

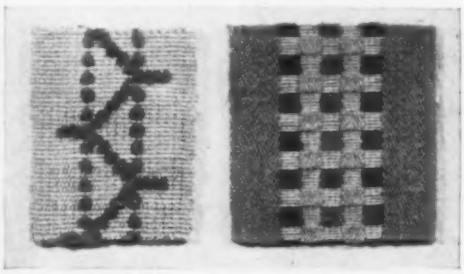


FIG 56 FIG 60

in design, which is practically unlimited, but only to refer to those features which govern this construction. In order to maintain a proper balance of the web in the single cloth figure, it is necessary to distribute the fig-

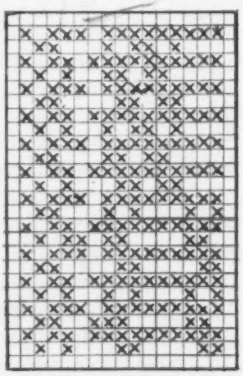


FIG. 61

ure warp uniformly over both the face and back of the goods; while in the double cloth webs, the figure, when not appearing on the face, is allowed to run between the upper and lower cloth in the same cavity with the rubber, and work with the gut. This, of course, in a measure interferes with the

contraction of the goods and has to be taken into consideration in their construction. Here again we must note the effect of contraction in piling up the floating figure, and the necessity of limiting this float so as to

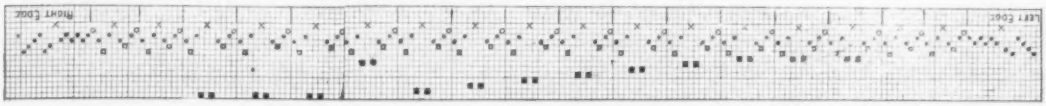


FIG. 57

avoid a ragged appearance. Fig. 56 shows a simple figure of this character, the harness draft of which is shown at Fig. 57, and the chain draft of same at Fig. 58. This figure is woven 7 up on the chain draft. This causes the thread to float for 3 picks on the face, this being about the limit for this type of contraction. A construction of such a web is as follows:

Edge, 25 threads	2/40s
Face, 68 threads	2/40s
Binder, 18 threads	2/20s
Back, 34 threads	2/20s
Figure and gut 68	2/40s
Filling	2/20s
Rubber, 19 threads per inch.	36s
Reed	16 dents per inch
Picks	46 per inch
Width	1 1/8 inches

While this figure is distributed over the web, most of the time it is running between the upper and lower cloth and acting as a gut. In order to get a uniform balance it is necessary to put some gut into the two outside cords, equivalent to the figure employed in each of the 13 center cords. The method here employed of burying the figure, when not needed in the design, between the upper and lower cloths, affords an opportunity of introducing alternating warps of different colors, bringing up one or the other or any part of them, as needed for the design.

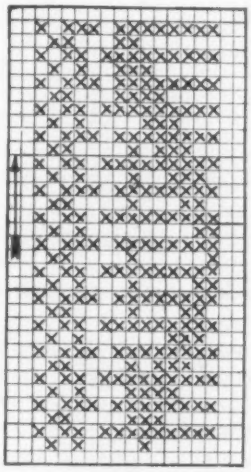


FIG. 58

Very neat border effects, designed to stand out prominently from the face of the goods are obtained by the use of left and right twist mercerized cords, about 4/20s yarn, arranged one thread left and one thread right twist side by side. The effect

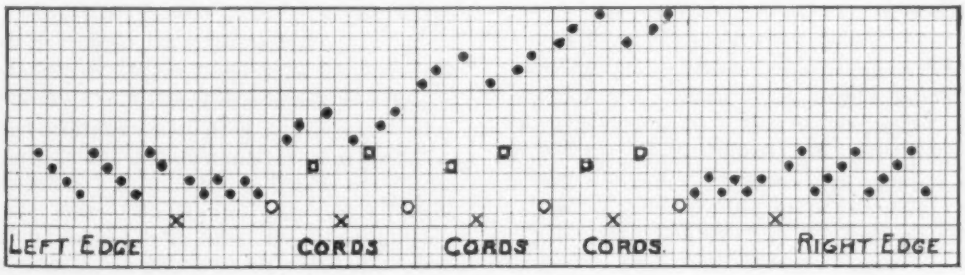


FIG. 59

of the contraction of the goods is to throw the different twists in opposite directions; in the form of butterfly's wings, which produces very attractive effects.

Another figure used on double cloth fancy webs is known as the sunken effect. This is produced by dropping sections of the face warp at intervals between the upper and lower cloths to any given design, so that in place of the face warp, the filling is seen at these points. No additional figure warps are needed for this class of goods, and where all the face threads are worked independently on a jacquard loom, considerable detail may be embodied in such patterns. A 3-leaf twill is invariably used for the ground of such goods, inasmuch as this type of weave stands up in sharp contrast to the sunken part, which forms the design. The figure must be carefully distributed and not used too freely, because the entire face lies between the two cloths at the sunken parts, and interferes very materially with the contraction.

Fig. 59 shows the harness draft of the web, Fig. 60. Fig. 61 is the chain draft. The face should be on one beam, and those parts used for the figure on separate beams, as the face is stitched all the time, whereas the figure warp lies between the two cloths in a straight line, when it does not appear on the face of the goods. The figure warps used in the draft should also be divided, as there are two distinct sections of weaves. A construction for a 1 3/8 inch web is as follows:

Twill face, 72 threads	2/60s
1st figure, 54 threads	2/60s
2nd figure, 36 threads	2/60s
Edge, 25 threads	2/60s
Binder, 28 threads	2/60s
Back, 54 threads	2/20s
Rubber, 31 threads	40s
Reed	18 dents per inch
Filling	2/20s
Picks	54 per inch
Width	1 3/8 inches

Seersucker effects were at one time very popular, but lately they have not been so much in evidence. There are produced by leaving out several rubber threads, also the face warp threads over them at any given point, so that this small section will be practically non-elastic. The remaining part of the web, being elastic, will bend and control the non-elastic section, so that it assumes a cockled seersucker form in the center of the web.

A HAND BOOK OF WEAVES

By G. H. Oelsner, Director of the Weaving School at Werdau.
Translated and Revised by Samuel S. Dale

This Series began in July, 1911

Most double cloths are stitched from back to face, because the back warp is usually finer than the back filling and is, consequently, covered better by the face threads. Stitching from face to back results in bringing the back filling to the face.

The simplest double weave is the double plain, Fig. 1347. It is difficult to lay down a general rule as to whether a double plain cloth should be stitched from back to face or from face to back. The quality and color of both face and back must be considered, as well as the arrangement of the colors in checks and stripes. If a double cloth is made with a dark back warp and a light colored plaid on a dark ground on the face, stitching from back to face has a tendency to subdue the light colors of the face filling. Stitching the same cloth from face to back would, on the other hand, subdue the light colors of the face warp.

Fig. 1357 is a 1 and 1 double plain weave stitched from back to face; the stitchers are risers indicated by the dotted circles.

Fig. 1359 shows the same weave stitched from face to back, the crosses representing stitchers, which are sinkers.

The stitchers in both weaves are arranged regularly in 8-leaf satin order, but both have the defect, which is inherent in double plain weaves, that the stitching thread passes directly from one side of the cloth to the other. This is shown in Fig. 1360 which is a longitudinal section of Fig. 1357. The first four warp threads and the ends of 8 picks are shown.

Fig. 1361 is a longitudinal section of the 1 and 1 plain weave shown at Fig. 1359,

(Copyright, 1913, by Samuel S. Dale.)

stitched from face to back. This face to back method is objectionable in double plain weaves with a coarse back filling on account of the increased curvature of the stitching thread, which must pass under the back filling.

The curvature of the stitching thread is less where the weave of either face or back allows the stitching thread to pass on the same side of (above or below) two consecutive picks of the same texture (face or back). Fig. 1363 shows this construction; the back weave is a 2 up 2 down twill; the face weave is plain. The stitching thread passes from back to face so as to bring it above both the preceding and succeeding back picks, bringing three risers together in the weave. In this way the curvature of the stitching thread is gradual, as shown by the longitudinal section, Fig. 1362, instead of abrupt, as in Figs. 1360 and 1361. The first four warp threads in each of the weaves, Figs. 1357, 1359 and 1363 are indicated by corresponding numbers, 1, 2, 3 and 4 in the respective sections, Figs. 1360, 1361 and 1362.

Only a part of the stitchers in Fig. 1364 are favorably placed to reduce the curvature of the stitching thread. Here we see a 1 and 1 fabric having a plain weave on the face and a 2 up 2 down basket on the back.

In Fig. 1365 the face is woven with a 2 up 2 down basket, the back with a plain weave. The set in both warp and filling is 2 face 1 back (beginning 1 face 1 back). The face to back stitchers, which are sinkers indicated by crosses, are favorably placed so that the stitching thread passes below a face, a back and a face pick in succession.

As the face threads work in pairs, being down for two picks in succession, the stitching from face to back is to be preferred. If, however, the low grade of the back filling makes stitching from back to face necessary, the stitchers can be inverted in the dotted squares, Figs. 1366, 1367 and 1370.

In Fig. 1366 each texture is woven with a 2 up 2 down basket and stitched in both ways. Stitchers from back to face are indicated by risers, dotted squares; from face to back by sinkers, crosses.

Fig. 1367 shows a 2 up 2 down basket face and a plain back stitched in modified broken twill order, as in Fig. 1451.

Fig. 1370 shows the two broken twill weaves, Figs. 1368 and 1369 (for back and face respectively) stitched, in regular broken 4-leaf twill order, 1, 2, 4 and 3. Here each stitcher has risers at the right and left as well as before and after.

Fig. 1371 shows two 3-leaf twills stitched

FIG. 1371

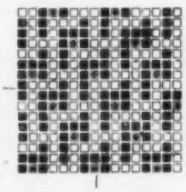


FIG. 1372

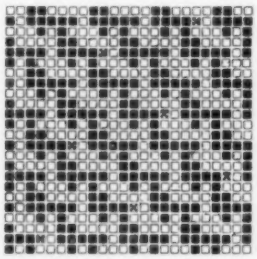
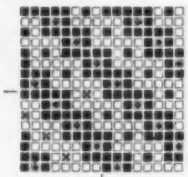


FIG. 1373



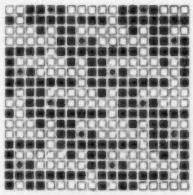


FIG. 1374

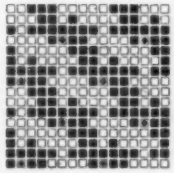


FIG. 1375

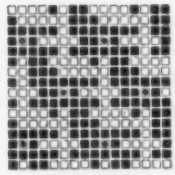


FIG. 1376

in twill order; the warp set is 1 and 1; the back set, 2 and 1.

Fig. 1372 shows a 2 up 2 down twill face and plain back, set 2 and 1. The stitching is from face to back in 8-leaf satin order. Such

FIG. 1377

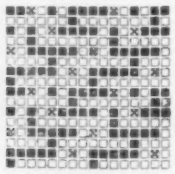


FIG. 1378

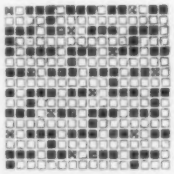


FIG. 1379

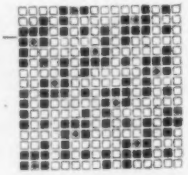


FIG. 1380

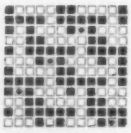


FIG. 1381

FIG. 1382

FIG. 1383

FIG. 1384

FIG. 1385

FIG. 1386

weaves are frequently stitched twice in a 6-thread square, Fig. 1380; or four times in a 12-thread square, Fig. 1381.

Fig. 1373 shows a double 2 up 2 down twill with a 1 and 1 set in warp and filling. The dotted squares, risers, indicate stitchers from back to face; the crosses indicate sinkers, the stitchers from face to back.

In Fig. 1374 the face is a 3 up 3 down twill; the back, a 1 down 2 up twill, the set 2 face 1 back, stitched from back to face.

Fig. 1375 has a 3 up 3 down twill face and plain back, the set is 3 face 1 back; stitched from back to face. A better cover is given to the back of this fabric by setting the filling 2 face 1 back 1 face 1 back with every 2 back picks interlacing the filling alike, as shown at Fig. 1376.

Figs. 1363 to 1376 are well suited for stitching the two weaves; this would not have been the case if the back weave had been begun at a different place. For example, if in Fig. 1372 the plain back weave instead of beginning 1 up 1 down had started with 1 down 1 up, the draft would have been as shown at Fig. 1382, which cannot be stitched to good advantage.

FIG. 1387

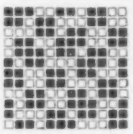


FIG. 1388

FIG. 1389

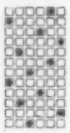
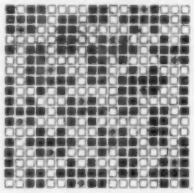


FIG. 1390



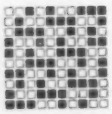


FIG. 1391

FIG. 1392

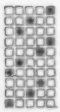


FIG. 1393

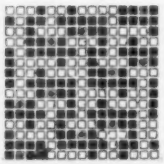


FIG. 1394

Again, if the twill of the back weave in Fig. 1373 instead of beginning 1 up 2 down 1 up had begun 1 down 2 up 1 down the draft would have been as shown at Fig. 1383, with no good places for stitching.

These examples show the necessity of constructing double weaves so as to leave a favorable place for the insertion of the stitchers.

While desirable, it is nevertheless impossible to arrange double weaves by fixed rules. The only general rule that can be given is to bring the risers of the back weave next to the risers of the face weave.

Fig. 1377 is a broken 1 up 3 down twill on the face and a 2 up 2 down twill on the back. Fig. 1378 is a 6-leaf satin face with a plain weave on the back. In both drafts the warp and filling are set 1 and 1. The face to back stitchers (x) are arranged in broken twill order in Fig. 1377, and in 6-leaf satin order in Fig. 1378.

Such weaves are used for goods of which the back and face are made of contrasting colors, the face plain and the back plaided. The stitchers are from face to back to prevent the back threads from showing on the face.

The weave at Fig. 1379 is adapted for worsted goods having a 2 up 2 down twill face. The back weave is a broken twill, while the stitchers are inserted in 8-leaf satin order. The warp is 1 and 1; the filling, 2 and 1.

For this class of goods the face is often woven with crepe and similar weaves, while the back weave is so arranged that the warp comes to the surface on the back of the cloth, the back filling being concealed in the center of the fabric. This is the case in Figs. 1379, 1390, 1398 and 1402. The face and back weaves and stitching order for Fig. 1378 are shown at Figs. 1384, 1385 and 1386; for Fig. 1390, at Figs. 1387, 1388 and 1389; for Fig. 1398, at Figs. 1395, 1396 and 1397; for Fig. 1402, at Figs. 1399, 1400 and 1401.

Fig. 1390 is a double weave with crepe face stitched in regular 10-leaf satin order. The face and back weaves, Figs. 1387 and 1388, and the order of stitching, Figs. 1389, are given separately.

DECORATING FABRICS WITH ARTIFICIAL SILK

From Le Moniteur de la Teinture
Translated from the French by the Editor of the Textile World Record

A process has recently been brought out in France for decorating textile fabrics with artificial silk. The collodion or other material used in the manufacture of artificial silk is moulded by mechanical means in the form of a network or separate motifs and applied to the fabric before the mixture has hardened. Fig. 1 shows the apparatus used

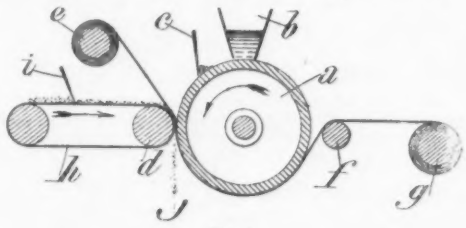


FIG. 1

for the process. Figs. 2 and 3 show two separate designs made by this method. The network or ornamental design in artificial silk is obtained by means of an engraved roll, a, Fig. 1. The collodion is stored in a tank, b, from which it is fed to the roller.

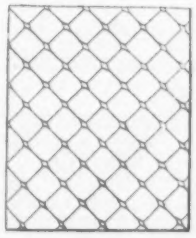


FIG. 2

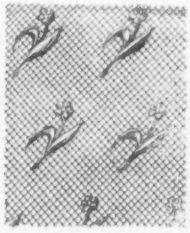


FIG. 3

The excess of collodion is removed by the scraper, c, leaving only sufficient collodion on the roller to fill the depressed parts. The fabric which is to be decorated is unwound from the roll, 2, and comes in contact with the roller, a, at a point a short distance below the scraper, c. The cloth is pressed against the engraved roller by the roller, d, and, after being carried by the engraved roller, passes over the carrier roll, f, and is

wound on the roll, g. During the contact with the roller, a, the collodion in the depressions becomes attached to the cloth. As the collodion mixture is in a plastic state it adheres firmly to the fabric, because of the pressure by the roller, d. The collodion hardens very quickly and becomes part of the fabric to which it is attached. When treating openwork fabrics such as tulle, and gauze, it is necessary to provide a foundation on the back of the fabric for the collodion. This is accomplished by a layer of shear flocks carried by an apron, h, to the back of the cloth. The thickness of the layer is regulated by the scraper, i. The flocks being pressed against the fabric adhere to the collodion through the opening in the fabric, the surplus flocks falling below the apparatus, as shown at j. When treating closely woven fabrics the flocks and apron, h, can be dispensed with. Fig. 2 shows a net work of artificial silk produced by this process. Fig. 3 shows separate designs on a gauze fabric.

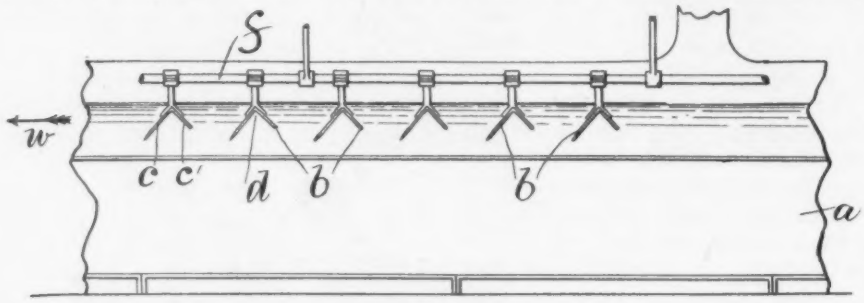


FIG. 1

WOOL SCOURING MACHINE

The accompanying illustrations show an improved apparatus for washing wool and other fibers. It is an English invention which has recently been patented in this country. On entering the bowl the liquor is forced down in a vertical direction and then passed longitudinally along or through the trough. On rising out of the bowl, the liquor flows in other directions and other currents are set up.

Fig. 1 is a side elevation of the apparatus. Fig. 2 is a plan showing the devices arranged in several positions. Fig. 3 is a perspective view of the improved device.

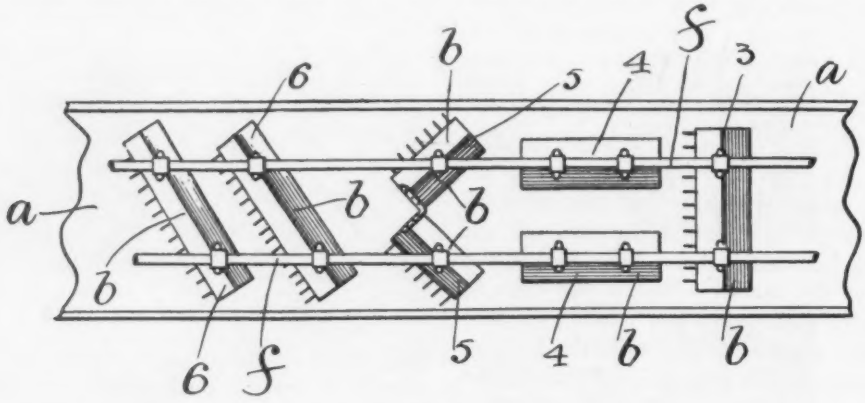


FIG. 2

The reciprocating forks heretofore employed in this type of machine are partly dispensed with and in their place are mounted a series of deflector plates, b, which are in the form of V shaped troughs, the apex of the V being at the top, while the splayed edges, c, c^1, are beneath, the outer ends, d, d^1, are open. Somewhat similarly formed plates, but with inclosed ends, have already

been proposed to be used for immersing the fibrous substances within the bowls by having motion in a vertical direction imparted to them. The plates, b, of the improved form are mounted upon framework, f, which rises, falls and travels horizontally through the liquid within the bowl, a, in the direction indicated by the arrow, w. When these plates, b, enter the bowl vertically the liquor flows up within the inner inclined surfaces of the plates, b, which are at an angle to the paths followed by the plates when entering the liquid, as well as laterally therefrom to

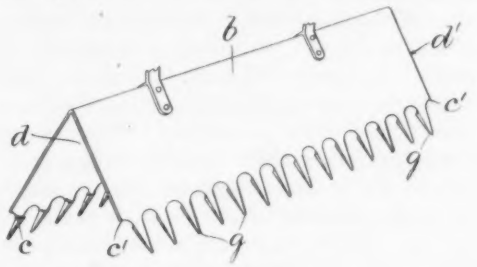


FIG. 3

rise above same. When the plates are moved horizontally through the liquid the liquor flows in the direction of the horizontal movement. When the plates rise the liquor flows laterally and otherwise causing eddies or cross currents, which are of great benefit for the washing away of the dirt or foreign matter connected with the wool. This circulation of the liquid does not cause as much matting or stringing together of the fibers as do the devices heretofore used, consequently the wool is more free and open and may be more easily carried through the subsequent operations.

The plates, b, may be mounted in series crosswise the bowl, a, as is shown by Fig. 1, and at 3, Fig. 2, or they may be arranged longitudinally as is shown at 4—4 Fig. 2, or they may occupy the positions as is shown at 5—5 Fig. 2; or again they may be arranged as shown at 6—6 Fig. 2.

Along one or other or both of the lower edges, c, c, of the devices, b, preferably only on the leading edge as shown at 3, Fig. 2, the prongs, g, displace entirely the ordinary prongs heretofore employed. Under certain conditions it may be desirable to have a series of the common prongs in one part of the bowl, a, with a series of plates, b, in another part of said bowl, a.

EMPLOYERS AND THE EDUCATION OF THE OPERATIVES

By Henry V. Gummere, Secretary of the Philadelphia Conference on Industrial Education

Everyone who has studied the subject at all knows the intimate relation between the industrial standing of our country and the knowledge and the efficiency of those engaged in its industries. While this relation holds for all, from the humblest unskilled operative up to the corporation manager, it seems especially important to have those in the lower places realize it, since their educational opportunities are certain to have been the more limited. Thousands of boys leave school yearly from the lower grades to go to work. To most of these will come later a keen realization of lost opportunities and the absolute necessity of making up for them, for they enter commercial or industrial occupations utterly unfitted for advancement to higher positions. What they can do, how well their capabilities can be developed, will in most cases depend on what possibilities their employer brings to their attention and makes available. Most employers are well aware of this and try to help those who work for them to find ways of gaining the knowledge they need. Experience has shown that as a purely business proposition this pays. A young fellow whose character and habits of life are known, whose personality and ability have been tried out, is usually much to be preferred to any stranger when appointments are made to positions of large responsibility.

The scope of this article will not permit more than a passing word regarding the various educational agencies which have been made use of for the purpose of training men for advancement. Its main purpose is to point out some of the many educational problems which must be studied in order to decide upon the best plan of procedure in any given case.

Associations or clubs, whether local or branches of a national body, which meet periodically to hear an address or participate in a discussion are at best educational only in a supplementary way. Any study done in connection with them is not consecutive and usually to be beneficial needs a foundation which is too often lacking. The corporation school is rather new, and for every corporation large enough to organize and conduct one, has interesting possibilities; the tendency, however, is always to train for immediate usefulness in detail rather than in broad principles, while the variety of courses which can be offered is bound to be small. If, for example, the school is organized to benefit the workers in the shop, what shall be done with those in the business office who need an entirely different training?

A correspondence school, either within the corporation or outside its control, offers the only means of systematic study for those residing at considerable distance from the large centers of population, or where the number of persons interested in a given kind of work is too few to warrant the formation of a regular class. When schools can be reached where experienced teachers are in charge, where direct recitation methods are used, and where a variety of courses can be offered in a systematic way, the establishment of regular classes in off-duty hours offers the best method of giving the desired instruction. These usually take the form of night schools or evening classes.

Night schools have flourished in the last twenty years wherever established. Their advantages are fully recognized by those who have been attending them. These are immediate help over difficulties, procured by having an instructor at hand; the opportunity to learn by the mistakes of others in the class; compulsory regularity in study, so important even to a very earnest student; the stimulus of numbers; the desire to stand well in his class; the possibility of drill; and many others. Such school work, offered not only in the evening but in the late afternoon as well, is likely to have a remarkable growth in the future. To the general public the work which is being done as regards both scope and quality remains practically an unknown quantity at the present time. Employers are just waking up to what has been and can be done in this way.

No matter what educational agency is used, a number of problems arise which can be solved only by the cooperation of employers, employees, and teachers. What courses are needed? How much time can be required of busy men for school work? What fees are suitable? How shall those be accommodated who have long distances to travel and high carfares to pay? Should classes be established in locations remote from the schools, in shops or in offices, but under the control of their trained faculties? These are some of the problems which have never been fully answered. The answers would probably differ with a change in locality. Other questions are almost wholly the concern of the employer, such as the following: What school and what kind of education can best help my employees to gain what I want them to know? Which of them can profit most by systematic school work? How can I help them to get it?

The only satisfactory way to reach a conclusion on these matters is to have some common meeting ground for all interests where free discussion can have full play. In Philadelphia steps to this end have already been taken. Last spring representatives of the Central Educational Institute of the Y. M. C. A., the Drexel Institute, the Franklin Institute, School of Industrial Arts, Spring Garden Institute, Temple University, and the Wagner Free Institute of Science joined with representatives of the Philadelphia trades schools and the Philadelphia and Camden public schools in arranging meetings for the purpose of becoming acquainted with one another's work and the educational problems employers have to face.

Wishing to avail themselves of the wide resources of the Public Education Association of Philadelphia, members of the faculties of the participating institutions are now organizing a section of that association to be known as The Industrial and Technical Education Conference of the Public Education Association. The membership is to

consist of educators and employers, and the purpose is to seek earnestly the solution of the problems arising from the needs of the vast numbers of young people who have never had proper opportunities for securing that knowledge which will pave the way to better service and higher responsibilities.

A NEW BOBBIN HOLDER

The bobbin holder shown in the illustrations is designed to utilize the motion of the spindle to produce a grip on the bobbin. The inventor, who has patented the device, describes it as follows: The object is to produce a clutching device which is simple, comparatively light, positive in its clutching action upon the bobbins when the spindle is revolving, and adapted to centralize the bobbin on the spindle, whether the bobbin is empty or carrying yarn. The device is also provided with a stop for limiting the bobbin's position downward upon the spindle. The bobbin may be readily attached to and removed from the spindle, if desired, while the spindle is in motion.

Fig. 1 is a vertical side elevation of portions of a spindle and base, embodying the improvement; Fig. 2 is a vertical longitudinal section showing the spindle and bobbin in the unclutched, stationary condition; Fig. 3 is a similar sectional view, showing the parts in the clutched condition.

The base and step employed for supporting the spindle-blade are constructed and mounted in the ordinary way. The whirl is provided with an enlarged upper annular extension terminating in a reduced sleeve fixed to the spindle. Secured to and surrounding sleeve is an upwardly extending bowl-shaped casing, surmounted by a disk-like bobbin-supporting cap of sheet-metal, having a downwardly extending peripheral flange or rim snugly fitting the upper portion of the casing. The center portion of the cap has an upwardly extending integral annular head having a dome-shaped end through which the spindle extends. The chamber of the head is made to receive the lower portion of the movable clutching members and the sleeve part of the vertically movable clutch-actuator. The wall of the annular head is provided with a plurality of spaced openings for receiving, holding and guiding the upper portion of the clutches.

When the spindle is stationary, the bobbin-

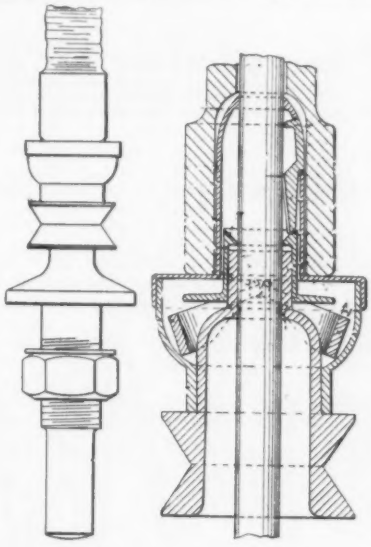


FIG. 1 FIG 2

engaging surface of the clutch is inward and disengaged from the bobbin, as shown in Figs. 2. When in normal running action the parts are in engagement, Fig. 3.

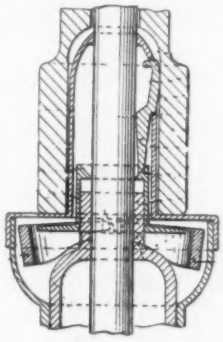


FIG. 3

Each of the clutching parts is pivoted about midway of its length by means of the outer shoulder, which rests on the lower end of the respective opening of the annular head. The lower portion of the clutch may be materially heavier than the other part, whereby the normal tendency or gravity of the clutch operates to maintain the latter in the unclutched condition when the spindle is non-revolving.

Questions and Answers

Under this head we undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to the TEXTILE WORLD RECORD. Questions should be stated as briefly and concisely as possible. Inquiries pertaining to textile processes, machinery, improvements, methods of management, the markets, etc., are especially invited, as well as any legitimate discussion on the views expressed. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as an evidence of good faith.

If the question is not of general interest to textile readers and involves expensive investigation, a charge covering the cost may be made, of which the inquirer will be advised before any expense is incurred.

EQUIPPING A MILL FOR BLEACHING COTTON YARN

Editor Textile World Record:

Please give me an estimate of how much it would cost to equip a mill for the dyeing of sulphur colors, and bleaching cotton skein yarn for knitting mills. I would also like to know about the buying, selling and profits obtained from a mill of a capacity of 3,000 pounds a week.

Bleacher (2198).

The equipment for a knitting mill dye house with a capacity of 3,000 pounds a week for ordinary tints and shades on skein yarn would be as follows: One boiling kier of wood or iron, three or four yarn tubs, large size, to dye one hundred pounds at each dyeing. Also several smaller tubs to dye fifty and twenty-five pounds at a dyeing. The smaller tubs are to save on the cost of dyeing in small lots. It would be possible to get along with less than four tubs, but it is better to have a box for each line of shades, such as pinks, blues, tans and slates.

These tubs should hold about 300 gallons so that when filled with dye they will have 250 gallons of dye liquor or about 20 pounds of liquor bath to one pound of yarn. These tubs are generally about 29 inches deep, 26 inches wide and from 7 to 10 feet long. It is much better to have the tub a little large, especially for light shades, because more even shades can be obtained.

There should also be one good extractor and one yarn dryer which will dry more than 500 pounds in 9 hours. There are some mills that are mercerizing and dyeing for the knitting trade, using the long chain system, then quilling and winding on cones. A plant such as this is expensive and perhaps a small mill could buy the dyed yarn cheaper than to erect and operate a dye house of this kind. There are also many knitting mills that do their own spinning and carding and that dye in the raw stock. These mills dye large lots of each color or shade at one dyeing, then blend them together thoroughly in large mixes, obtaining uniform colors at a very low cost for labor.

The yarn boiling kier can be omitted and the yarn wet on sticks. Some dyers give the yarn six or seven turns in boiling water, then throw up the yarn and dye in the boiling-out water. If a dye house is to be built it should be of mill construction, with a monitor rood, apart from the main mill and close to the boiler house. There should be plenty of light. The floor should be of concrete. The sewers should be large and easy of access. The water mains should be of cast iron and laid under the floor, before the floor is finished. Each tub should have its own water pipe which should be large enough to fill the tub quickly.

The water supply should be ample and in all modern plants there is installed a filter system, thus insuring clean water for bleaching. The steam pipes should be laid on the wall of the building and covered, to prevent radiation of heat. The water pipes over the ground should be painted with an anti-rust paint. There should be a blower system of ventilation, by a direct intake of air from the outside, and a heating system to prevent fog in cold weather. This will prevent dripping on the yarn, the rotting of roof timbers and planking, and the rusting of piping. In some cases the exhaust heat from the dye room can be used to prevent fog in the dye house in cold weather, but it is not as good as the blower system, although more economical.

The dye house should contain a small office and drug room. The office should have a small closet or cabinet to keep samples, free from light and air, also a small sink, a steam bath, a good scale, and about half a dozen agate pots for dye testing and

sample dyeing. The drug room should be cool and dry all the time. All the cans and barrels should be plainly marked as to whether they contain paste or powder and should be kept covered. The boiling kier, yarn dyeing tubs, extractor and yarn dryer should be arranged to avoid unnecessary handling of the goods. Such a dye house may seem extravagant, but if carefully planned will not cost any more to build and very much less to maintain than a dye house built without regard to efficiency or the future cost of repairs or upkeep.

Amazon.

PULLING CARPETS

Editor Textile World Record:

Can you give me any information that will aid us in finding some substance such as an oil or emulsion that we can use on rags from hair and wool carpets to render the hair less slippery and put the carpets in such conditions that in running through our rag pickers we can get a better staple. I am not satisfied with the length we are getting and am seeking information that will lead us either to adjust our pickers or lubricate our stock in such a way as to get a longer staple. We are enclosing sample of the hair such as we use, also shoddy made from wool carpets. It must not be too expensive or have an offensive odor, as we do not wash our goods and part of the stock is to be used in a coarse grade of camp blanket used by the mining and lumbering trade. At the present time we are using a wool oil worth about 14 cents per gallon, which has alkali in the oil, making an emulsion with the addition of an equal quantity of water. Probably the larger part of the oil is paraffine and not a very good lubricant for wool stock. Any information you can give us will be appreciated. Springdale (2221).

Brown grease or wool oil thinned down with mineral oil and emulsified in water is the lubricant commonly used by rag-pullers in Yorkshire. The matter of length of fiber is probably one of the original length and of the adjustment of the machine. On reference to a firm of shoddy machine builders of great experience the following reply has been received:

"We do not think your friend can do better than use the rag machine for this material and he can never hope to get much length out of it as it is only low stuff to start with. He might try a coarser-covered cylinder and run the swift slower and the feed quicker, in order to get rather more length."

This opinion states the direction that mechanical adjustment ought to take and there should be no difficulty in testing the effect of the higher-priced oils.

James Strand.

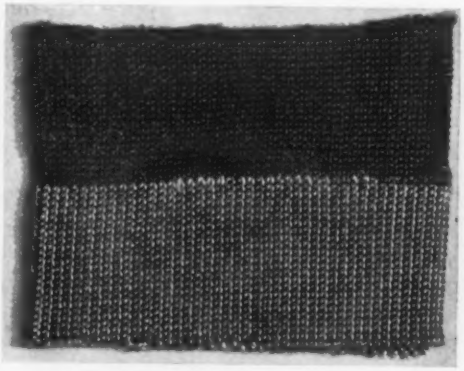
KNITTING ARTIFICIAL SILK

Editor Textile World Record:

Please give me information regarding the running of artificial silk on a hosiery frame. Is there any way of softening the yarn? What is the best way to run this kind of yarn for making hosiery?

Calais (2164).

I would suggest that "Calais" get his silk on small cones and have his machines fitted with stop motions. In knitting this class of stock it is also necessary to have a slight tension on the yarn. The knots in the silk



A KNITTED FABRIC MADE ON A HOSIERY MACHINE

play an important part in the knitting as the cones are all universal wound and almost every knot catches the yarn and as it is hard and of a woody nature will break the end every time unless a stop motion is used to offset the breaking. He will also find it necessary to run machines slower than on cotton or spun or thrown silk. I have made knitted scarfs of the stockinet pattern which is practically the same fabric and found considerable trouble until adopting the above measures.

As for a softener, there is nothing better that I found than running the silk over oiled pieces of cloth. There appears to be not so much trouble with the yarn itself as there is with the needles. The needles become dry and apparently a little roughed and the loops seem to hang and tear and by oiling

the yarn as stated above seems to be the only practical way of keeping the needles lubricated and perfectly smooth. Am inclosing a piece of knitted stockinet scarf which will show for itself. It is also very necessary to watch needles for the least roughness of latch or rivet, as each little roughness will show a woolly streak or wale in the fabric. Cipango.

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BLEACHING WOOLEN UNDERWEAR

Editor Textile World Record:

In bleaching white woolens with sulphur we find that rinsing after the bleaching in warm water to remove the sulphur smell gives the goods a yellow cast. Could you give us some information as to how to avoid doing this? We use a hot air web dryer and cannot wait to air goods outside.

Mansfield (2240).

When bleaching with sulphur dioxide if the treatment with the gas is followed by a repeated washing in hot water the goods naturally become yellower, as an oxidation of the material takes place. This can, however, be avoided if the washing in hot water be followed by a rapid treatment in a weak bath of ammonia or carbonate of soda. This neutralizes the sulphurous acid present in the wool and avoids to a great extent the formation of the yellow color. Umbria.

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CONTRACTION IN DOUBLING YARN

Editor Textile World Record:

We have a customer calling for 3/40s yarn, 30 turns in the doubling. Will you kindly advise us what size this yarn should be after twisting? What is the customary allowance for contraction on counts ranging from 10s to 40s, where there is such hard twist as mentioned above?

Wayburn (2213).

When 3/40s cotton yarn has 30 turns per inch it is very hard twisted. 3/40s is equal to single 13 1/3s. The square root of 13 1/3 is 3.65.

$30 \div 3.65 = 8.22$, multiplier.

This can be used for sewing thread, lisle, crepe or heald yarns and tire cloths. The amount of contraction depends on the amount of twist inserted in the doubled yarn, the direction of the twist, the number of threads in the doubled yarn, and the counts of single yarn. Assuming three threads of 40s are to be doubled with 30 turns per inch, I should expect the resultant counts of the doubled yarn to be between 11 1/4s and 11 3/4s. If a multiplier of 8.22 is used for 3-ply yarns in 10s to 40s, I should say that the percentage of contraction would be from 15 to 25 per cent., depending on conditions which vary somewhat in every mill. The percentage can be easily determined by reeling some doubled yarn and getting the resultant counts. Compare this with the counts of the singles before doubling. Ashley.

It is impossible to say definitely what the contraction of 3/40s cotton yarn would be on account of the wide variation under different conditions. When two or three strands of yarn are twisted together on the twister, the twist is put in opposite to that in the single yarn, that is, the single yarn is twisted regular and the ply-yarn is twisted the reverse. This has a tendency to take out a certain amount of twist from the single yarns and causes a lengthening to take place. As the twisting progresses this elongation grows less and finally ceases, this point depending upon the amount of twist present in the single yarn. The greater this twist, the more will it lengthen by untwisting. If the twisting was stopped at this point, there would be an actual increase in the length of the ply-yarn over the single yarn and the count would be light. Any further twist put in at this point causes a contraction which increases as the twist increases. It is evident that the more twist there is in the single yarns, the more the yarn will elongate at first and the less will the final contraction be. The more twist that is put in the ply-yarn the greater will be the contraction, other conditions being equal. In making 3/40s yarn with hard twist the contraction will vary, depending upon whether the single yarn is hard or soft twisted. The amount of contraction will vary under varying conditions of humidity and temperature, whether the twisting is done wet or dry.

In making 2-ply yarn, an actual elongation takes place and the ply yarn is lighter than the number would indicate. This elongation grows less until about 24s or 26s counts are reached, at which point the forces tend to counterbalance each other. At 30s a contraction sets in and increases with a maxi-

mum of about 5 or 6 per cent. on 90s and 100s counts. These figures are based on experience on 2-ply yarns for the market and will vary with varying conditions of twist, etc.

In making 2/40s with about 22 turns of twist, I find that if the single yarn is spun 41s count or a fraction lighter, the resulting ply yarn will be the equivalent of a single 20s in weight. In making 3/40s with 30 turns of twist the contraction would be considerably greater. To say exactly what this contraction will be is impossible. If it is necessary to have the ply-yarn the exact equivalent of single 13 1/3 yarn, the best method for finding the single counts is to make a few experiments. Twist 3 strands of single 40s and determine the amount of contraction to suit the special case. Then calculate the size of the single yarns to give a 3-ply equal to single 13 1/3. This degree of accuracy is not often desired. B. M. Parker.

The question has been put in the following altered form to an experienced doubler of cotton: "What counts of singles should be used to produce 3/40s (13 1/3 hanks per pound) with a twist of 30 turns to the inch?" He replied: "Take 3 ends of 1/42s cotton and with 30 turns you will get as near as possible to the count you want." In other words, he allows for a contraction of five per cent.

Being further asked whether he would think it advisable to use mixed counts, that is, two of one count and one of another, he answered: "You get a much rounder and more regular thread by twisting three of the same count than by using various singles and, judging from the twist required, I should suppose smoothness and regularity to be indispensable."

Such is the voice of experience. It is to be observed that authorities upon the theory of spinning avoid responsibility for any fixed formula and content themselves with observing that the degree of contraction varies with a large number of factors, such as the elasticity, twist in the single, material and tension. Wessex.

If the strands of single yarn making the 3-ply are designated a, b, c, the resulting count of the 3-ply will be equal to (a b c) ÷ ab + bc + ac. If the 3-ply is made of 3 strands of 40s yarn the resulting count will be 13 1/3. Owing to the take-up in twisting, the ply yarn will be heavier than the theoretical count. This take-up can be calculated only as a function of the diameter of the single yarn and is usually estimated at 5 to 10 per cent. Gaul.

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A CHINESE FIBER

Editor Textile World Record:

I am enclosing herewith a specimen of "Bast fiber" grown in China, also cloth woven by hand from this fiber by the Chinese. The fiber appears to be linen, but the Chinaman says they get it from a tree. Just how exact his statement is I do not know. Can you inform me as to the market value of these goods in its present condition and also in its finished state, mentioning at the same time who would be interested in a product of this kind? Swatches are cut the width of the goods.

Have you any idea what the cost of raw indigo is such as comes from China? Isidor (2233).

The sample of Chinese fiber is "china grass" or ramie, and the fabric, the "grass cloth" made from it. The fiber is not derived from a tree, but is extracted from the inner bark of a slender stalk which grows from 3 to 6 feet high.

This fiber is produced in commercial quantity chiefly in the far East, China, Japan and Formosa being the principal, if not the only sources of supply. In other parts of the world, where it will grow, its culture has been chiefly experimental. The Chinese fiber is produced principally in the basin of the Yangtze River, Central China, in the provinces of Kiangsi, Szechuen, Hunan and Hupei, finding outlets at the ports of Hankow and Kinkiang, the former being the center of the export trade. The grass is also handled by firms in Hong Kong, Canton and Shanghai. In China two kinds of fiber are recognized, the "white" grass, in two qualities, and the "green," one quality. The sample sent is green ramie. The raw fiber, as imported, is worth 6 to 10 cents per pound at ports of entry.

Regarding the fabric sent, your correspondent apparently makes a distinction

where none exists. The "present state" of the sample is the "finished state". This cloth is manufactured in China chiefly for home consumption, and is largely used for summer clothing, the province of Fukken being one of the centers of the industry—not only the native grass, but that imported from Formosa being employed in the manufacture. In regard to prices, I can give no figures, for the little, if any, that is imported appears in the customs reports with the manufactures of flax and hemp, and I have never seen it on sale. It is very doubtful if it would find much of a market if imported, although ramie dress goods—probably of American manufacture—are beginning to be sold in this country, without disguise, and under the name ramie, which is encouraging.

Considerable raw ramie fiber is now imported into the United States as there are several concerns engaged in deguming, combing and spinning the fiber. At the same time the manufactured ramie, in the form of sliver or roving, is being imported (last year) to the extent of upwards of twenty-five tons,—not a large quantity, compared with the outputs of some of the European concerns, which have produced each, from a hundred to two hundred tons of yarns annually, but a beginning.

Charles Richards Dodge.

SULPHUR IN TEXTILES

Editor Textile World Record:

The enclosed samples have been full bleached and well washed, then dyed with direct colors with the addition of common salt and soda ash. The final treatment previous to packing is a bath in a weak solution of Turkey red oil. I find that these goods when they come in contact with silverware have a tendency to discolor or tarnish the same. I think it is due to the presence of sulphur. Can you give me a good, safe and reliable test for the presence of sulphur? Wrentham (2191).

The use of direct dyes has nothing whatever to do with that form of sulphur that may be present in goods that have a tendency to discolor silverware, although such dyes may contain sulphur in a chemical combination with the organic constituents of the dye, as sulphonic acids. In such a state it is quite inactive as a discoloring agent, and besides, does not exist in the dyed fiber in a form capable of discoloring silver. Sulphur capable of discoloring silver must exist in the form of free sulphur or as a sulphide, either of an alkali or as sulphuretted hydrogen.

There are several tests for the presence of sulphur, but the one most conclusive is that which shows to the eye of the operator the results within a few moments, is the most practical, and is conducted in the following manner:

About ten or twelve square inches of the fabric to be tested, is cut into small pieces and introduced into an 8-ounce Erlenmayer flask, or other form of flat bottomed flask, and digested with 2 ounces of distilled water for a few minutes; then pour in through a dry funnel about 10 grains of finely powdered magnesium metal; agitate gently for a minute to ensure the complete wetting of the powder, and add about 1/4 ounce of pure dilute hydrochloric acid. Place the flask on the wire gauze of a ring stand over a Bunsen, heating to boiling and boil for an instant. As soon as the acid has been added, cover the mouth of the flask with a square of white filter paper moistened in the center with a drop of a solution of acetate of lead.

If sulphur is present in such form as will discolor silverware, it will manifest itself at once by discoloring the lead spot on the test paper. According to the degree of discoloration, the relative amount of sulphur may be judged after some practice. This test requires but a few minutes to perform, and many such tests can be carried out at one time.

Voh's tests with sodium nitroprusside is also very delicate, and is used on textiles where colors are not present, as its observation would thereby be obscured. Horbaczewski's method is extremely delicate, using barium chloride, but sometimes requires two days for a final observation. The preparation of fabrics to respond favorably to the sulphur test requires extreme care in the bleaching of the goods, and especially during the souring after bleaching, which should be done with muriatic acid instead of oil of vitriol. Every stage of the converting should be so arranged that sulphur or sulphur containing materials do not come in contact

with the goods. A mill undertaking to do this work should have a water supply free from contamination. Tests of white goods before dyeing should be frequently made at every stage of the processes, as distinct surprises will quite unexpectedly be met with in the presence of sulphur showing where least expected. Berwick.

The samples are very satisfactory, but the finish of the dyeings with Turkey red oil is not suitable for cloth that is to come in contact with silver. The cloth contains sulphur from the red oil and it will make little difference if this final treatment is left out. Detection of sulphur in cotton material is very simple. A fair sized piece, say two square inches, is boiled in a beaker with fairly strong hydrochloric acid and a few crystals of potassium chlorate. This destroys the cellulose and converts any sulphur present into potassium sulphate. The liquor is evaporated to total dryness and slightly heated to get rid of the excess of hydrochloric acid. Care must be taken to avoid loss by spurting. The dry residue is exhausted with water and filtered through a pure filter. The filtrate gives a precipitate with barium chloride, which is insoluble in hydrochloric acid, the original dyeing contained sulphur. As a confirmatory test the precipitate can be filtered off, washed, dried and ignited with charcoal dust. If the cloth contained sulphur is ignited, the residue will give off a gas on treatment with hydrochloric acid that will blacken lead paper (made by soaking blotting paper in a solution of lead nitrate or acetate and then drying it). Lead paper must be kept in a bottle with a closely fitting stopper. In some cases it is sufficient to heat a scrap of the dyed cotton in a test tube with dilute hydrochloric acid taking care to plug the mouth of the test tube before heating with a crumpled piece of damp lead paper which will turn black in many cases if sulphur is present. The blackening is tinged with brown.

Culebra.

If sulphur is present it is most likely in the form of a soluble sulphide and can easily be detected by boiling a small sample of the material for some time with a little distilled water, just enough to cover it, and examining for sulphuretted hydrogen by any of the ordinary tests. Raffaele Sansone.

ARTIFICIAL SILK WASTE

Editor Textile World Record:

Please give me some information on the manufacture of the enclosed sample of artificial silk, made from garnetted yarn. Vassar (2239).

Our English correspondent replies as follows:

The information obtained in the course of some inquiries in the English trade is that this material is being somewhat largely used in Germany, for mixing with wool to make dress goods. The artificial silk refuses the wool dye and gives a brilliant effect upon the darker background. In one endeavor to turn the material to account in a similar way in England it seems that the best way was not found. The wool and garnetted artificial silk waste were blended together and combed upon a 56s comb. The loss in carding was very great and the blend of artificial silk (at about 60 cents) and wool cost nearly $2 a pound in the top. Since then the waste has been dealt in at much lower rates and transactions at about 16 cents have been heard of. There is an increasing production of this form of waste, as artificial silk yarn of a faulty character may be garnetted in order to save further loss. Waste is produced in twisting at the artificial silk factories, and in addition waste accumulates on the hands of those who weave the material. A waste-silk dresser would no doubt dress the waste on the regular silk dressing frames and mix it with wool in the form of sliver. I am unable to state in precisely which way the material is being worked in Germany. Regent.

Nearly all of this class of goods is imported from Barmen, Germany and to my knowledge there are only two small firms in the state of New Hampshire manufacturing these braids They are made in Barmen on 64 space shuttle looms. The pattern showing the black scallop is made with one shuttle and averages from 80 to 100 yards per week of 55 hours on each space. The pattern with the white scallop is made on

the same kind of a loom, but with two shuttles, the production being about 60 to 80 yards per space every 55 hours. The pattern with the blue figures will average about 50 yards per week. The scallop in this design is woven with the rest of the braid. The scallops on the other two braids are put on with a scalloping attachment on the sewing machine.

The braids are finished in a weak solution of gum arabic before they are scalloped. These goods are generally made with a 2/40s cotton for the warp and a little better quality, 2.40s and 2/30s sea island yarn, for the filling. The scalloping is done with 2 ends of 2/40s mercerized yarn. One operator can scallop about 1,000 yards per day of ten hours.

As very little of this work is done in this country it would be hard to estimate cost of production. The looms for this work are built in this country. I might also mention that braids of better quality are being made on regular shaft looms with the identical scallop put on by sewing machines. They are woven on the loom and afterwards finished in gum arabic. The edge of the scallop is trimmed with a pair of shears. This method might do away with the scalloping done on the sewing machines. Ruthven.

RAG SHREDDING MACHINE

Editor Textile World Record:

We send herewith small clippings of carpets and also some of the material which we have raveled by hand. A good deal of this material is prepared for packing waste for car boxes. Instead of being made into a fine shoddy it is put into a thread form. These threads are carded out very readily and make a much stronger staple than if run through the shoddy picker. We have been told that these threads can be prepared on the regular shoddy picker by running it slower, but have never had good success in doing it this way. If this is not practical on the shoddy picker we can use a different oil, or treat the rags in some different way to produce a long staple shoddy. Any information you can give us will be appreciated.

Stevens (2201).

The difficulty in pulling out threads in one direction without injury to the thread which crosses them in the fabric is a very old one and the attempts that have been made produce better results from some fabrics than others. Samples are sent herewith of results obtained in pulling woolens and dress goods on a machine made primarily for the purpose of shredding cotton rags and curtains to make engine cleaning waste. The machine has one swift of 30 inches in diameter, on which are mounted a dozen workers of 4 1/2-inch diameter covered with garnett wire of different grades. Carpets have not been tried on it by the makers so that the suitability of the machine for the precise purpose cannot be stated in advance. There are rags which can be shredded and rags which cannot and the only way is to proceed by practical trial. James Strand.

WEIGHTING SILK HOSIERY

Editor Textile World Record:

We would like some information in regard to finishing what is known as fifty-cent, pure silk, half hose, manufactured on seamless machines and generally made from a ten to twelve strand No. 1 Japan silk. We understand there is a method of weighting these goods after they are dyed and should like to know what method is used. We have been informed that sulphate of zinc is sometimes used, as well as a good grade of carpenter's glue. We find that our goods are inclined to be fuzzy and would like to overcome this defect without injuring the fabric, if that is possible. We are enclosing a sample of half hose, showing the goods as they are made in the gum. Of course, after these goods are boiled off they present a different appearance.

Michigan (2238).

Probably the least objectionable method and the one most likely to get rid of the fuzziness complained about would be to steep the hose in rice water, which is extensively used in Japan for weighting silk. According to one recipe, broken or damaged rice should be steeped in about five parts by weight of hot water. The mixture should be strained before use. A little white glue, dextrin or albumen may be added if desired and the general effect will be to lend crispness and firmness to the stocking. This treatment is as harmless as ordinary starching. The use of zinc or other metallic salts cannot be too much deprecated in the interests alike of the wearer and manufacturer.

Lump sugar (3 ounces to 1 1/4 pounds of water) well boiled in a double vessel is sometimes used to lend a bright finish as well as extra weight and it would be easy to make an experiment with this. Regent.

BLEACHING KNIT GOODS

Editor Textile World Record:

We wish information relative to the conveying of two rolls of knit goods, one on each side of the kier, from roll to the kier, then boiling, and later from kier into the chemical vat. Would it be best to use reels? If so, please illustrate by diagram and show method and material to be used. I enclose a sketch showing the plan of our bleachery. Mayfair (2217).

When running two ends in a bleachery great care must be taken in regulating the machines. With light goods a speed of from

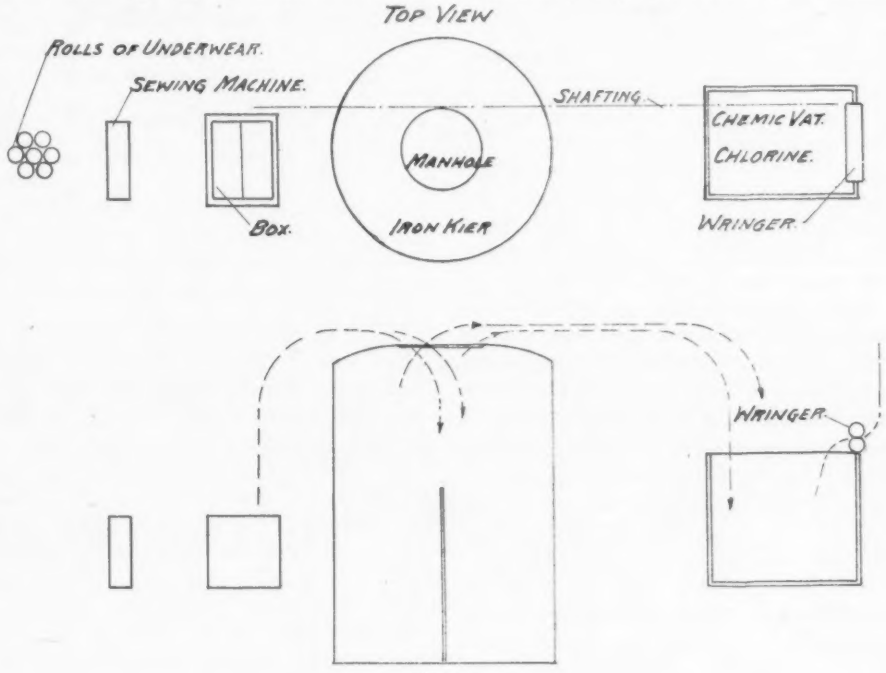


FIG. 1

200 to 225 yards per minute would be about right. Figs. 2 and 3 shows the plan of a bleachery which I have tried to make as simple as possible. In front is the sewing machine to sew the ends together; next is a cradle with three rollers on the bottom so that the rolls of goods will turn around easily. If "Mayfair" will follow the heavy dotted lines he can trace them through the pot eyes which divide the ends and keep them open. In the machine boxes there is a perforated division board to keep the two strands from getting twisted or crossed. A, Fig. 2, is the sewing machine for sewing ends together. B, is a double cradle for holding two rolls of goods with three rollers in the bottom. CC, are the pot eyes to keep the two strands divided both before and after passing through the machine. D, is the water machine or saturator. E, is a reel or grooved pulleys could be used to carry the goods over the kier.

A, Fig. 3, shows the pot eyes to keep the strands from getting tangled; B, reels to carry the goods out of machine; C, driving shaft and pulley; D, washer; E, chemic machine; F, ageing pits where the goods lie after passing through the chlorine bath. I used to have a peg at the washer to divide the ends as they went through the machine. "Mayfair" can trace the heavy lines through the machine which saturates the goods as they go into the kier, where they are plaited down evenly to ensure a uniform boil. This is essential in order to get an even bleach.

After the goods are boiled the heavy lines can again be followed through the washing machines where the goods are prepared to take the chemic. This machine should be regulated with levers or screws to put a little pressure on the goods and leave them

in a semi-dry state. Then enter the goods in the chlorine bath where the action of the chemic will not be counteracted by an excess of water. The goods are then run into the ageing vats to let the bleaching agent do its work. It will be noticed in the sketch that there is a cradle in the first place. Of course if there are two strands and a center to pass through, rolls will answer just as well, but there must be two and both ends started at the same time. It is essential that divisions be put in the machine boxes, otherwise the ends will get crossed and twisted. Have the speed of the machine regulated correctly. The reels behind the machines should have a double pot eye in front to ensure the ends being kept apart.

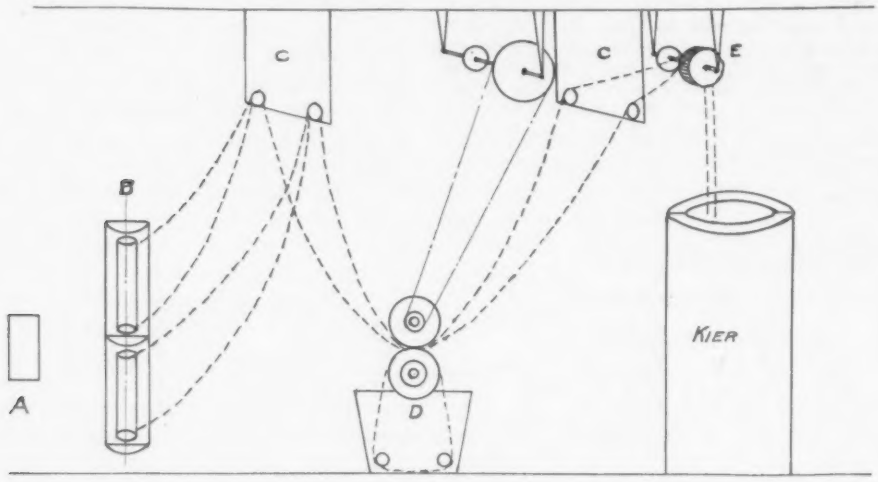


FIG. 2

If it is unnecessary to wash the goods after leaving the kier, the washing machine and reels can be dispensed with and the chlorine machine used instead. It seems to me that if the goods are run right out of the kier into the chemic bath the goods will not be as white. A little stronger chemic must be used on that account. It is necessary to drive the reels from the machine so that when the machine is stopped the reel stops also and does not go along beating

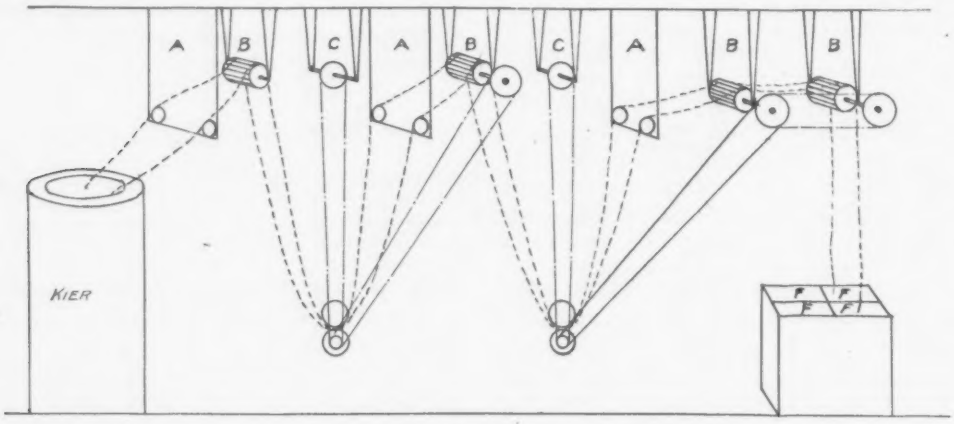


FIG. 3

the goods into holes as would be the case if the reels were driven separate from the machines. In some cases I have used aluminum grooved pulleys which have a better drag on the goods than the ordinary wooden reels. I have shown only two ageing vats, but if "Mayfair" wants to use more he can extend them and carry reels over them so that the goods can be deposited into the vat from the reel. Alpha.

COST OF FINISHING COTTON GOODS

Editor Textile World Record:

Can you tell me how to calculate the cost of finishing cotton piece goods? For example, find the cost of finishing one piece of pocketing going through the following processes: Mangle, dry, starch, dry, sprinkle, calender, beetle, taking in all five hours. Finisher (2245).

I have found that the only reliable way to estimate the cost of finishing cotton piece goods is to have an experienced man follow a lot of about 20 pieces through the different processes, taking account of the number of hands, time and wages, also cost of chemicals, etc., used, including the cost of power, overhead charges, etc. Hector.

The method to adopt varies with the circumstances and the data that have been kept. A good way of estimating the cost is to rate each machine at a definite price per hour and classify the goods treated according to the time occupied in process. The hourly rate includes labor, materials, power and fixed charges and is based upon an output sufficiently below the maximum to compensate for standing time. The assumption requires periodical checking, but this system of incorporating all costs into one figure simplifies estimating where a variety of cloths requiring different lengths of time are being handled and it lessens the chance of leaving leakages overlooked. Regent.

To find the cost of finishing cotton goods going through the processes named it will be necessary to find the length that will use up a given quantity of starch. Follow this yardage around through the various processes taking note of the time occupied. Find the cost of labor on each machine, also the cost of finishing materials for the yardage finished and cost of power, wear and tear; then divide the total cost by the number of pieces finished and the result is the cost of the piece. Most of the large finishing concerns have a card system and each employe fills out a card with the order number, machine number, time of starting and time of finishing each order. The cost is then readily seen for each lot. Montrose.

SLACKENING OF SLIVER

Editor Textile World Record:

In some of our drawing frames it sometimes happens that one of the slivers after getting through the iron rolls, slacken and causes the web to clog up the trumpet. The cotton is bleached. Will you please tell me some remedy to get the web to run even? Weymouth (2259).

I have often found just such trouble and for a long time was much puzzled as to the exact cause of the slack running of ends, between front metallic rolls and the calender roll, at coiler. One of the most frequent causes of the trouble is wearing of the necks of the top rolls, thus allowing the fluter on the rolls to mesh deeper together. When this happens on one side only it is generally evidence that that side is worn more than the other side. This can be tested by taking hold of the stirrup on the slack running side and relieving the weight slightly, when the end will run tighter.

This trouble can usually be overcome by changing the top metallic rolls, and swapping them around, taking a roll from a slack running end and putting where there is a tight running end. Sometimes turning a top roll and changing ends will overcome the slack running. The proper method, of course, is to get a new set of rolls or at least to have the old set renecked.

Where all the ends on a drawing frame run slack between front roll and coiler, the draft between these two points can be changed slightly. Much bad work is caused by having the ends run too tight and the writer prefers to have them run a little slack. The trumpets should be of the proper size to give a uniform tension. As the weather changes affect their tension it is sometimes necessary to change a tooth one way or the other, but this should be done carefully.

Milan.

Knitting Department

KNIT GOODS SITUATION

The manufacturers of heavy weight underwear report quite generally that a large percentage of their production for the next six months has already been sold, and some of them anticipate being out of the market early in January, when it is expected that buyers will be in town to clean up the balance of their purchases. The annual meeting and banquet takes place during that month and most buyers plan on completing their contracts by that time.

There are some mills that depend upon business on lines of women's ribbed vests and pants to retail at 25 cents that have not taken as many orders as usual, but most of these makers are gradually changing their production over to other lines, such as ribbed goods to cost in the neighborhood of $3.25 and also to 50-cent combination suits. As a fairly good volume of business is coming forward on this class of underwear, the orders for the cheaper goods will not be needed. It looks now as if business on 25-cent underwear is about doomed, as it has necessarily become so poor that consumers are not taking it except in small volume.

The Lion Mfg. Co. of St. Johnsville is one mill that continues to make cheap goods and they are offering for fall 1914, a 5 1/2-pound bleached garment at $2.05 with extra sizes at $2.20; also a 6-pound bleached at $2.15 and extra sizes at $2.30.

It was reported in our last issue that the Royal Gem Mill had discontinued their 8-pound plain stitch suit inasmuch as it was not shown early during the selling season. This concern, however, has lately put this garment back in their line at $4.00 per dozen. They also make a tuck stitch at $3.75 and heavier weight line of plain stitch carded suits at $4.75 with combed line at $6.25.

LaTosca Knitting Co. are quoting $3.62 1/2 for their 7 1/2-pound combed vests and pants and also showing carded line made in the Supreme branch at $3.25 with suits of the same fabric at $6.00.

The Campbell Knitting Mill Co. of Elmira also show a line of carded vests and pants, weighing 7 pounds at $3.25 or one weighing 7 1/2 pounds at $3.37 1/2, while their combed line weighing 7 pounds is quoted at $3.50 and it is on this particular business, it is reported, that an excellent business has been placed. This concern is also showing a line of women's suits of carded cloth at $5.00 and combed line, weighing 11 pounds at $6.75 with line of misses' combed yarn suits made with drop seat at $3.25 for size 2, rise 25 cents.

The price on the majority of lines of men's 11-pound State-made ribbed shirts and drawers is $3.75 with the exception of the Blood Knitting Co., who are offering their line at $3.62 1/2. The Morris line of two-threaded goods has been reduced in weight from 12 to 11 pounds and the production of the mill has been sold up at $3.75.

There are a number of Southern lines at lower prices, among which might be mentioned the Chickamauga line at $3.55 and the Haynes line at $3.62 1/2. We are told that the latter named mill have taken orders enough to run them through the entire year of 1914.

In men's fleeced shirts and drawers the advance is very noticeable on the low priced numbers. The Phoenix line that sold last year at $3.25 is now held at $3.62 1/2, although it is understood that this concern will take orders for the same cloth with cheaper trimming at $3.57 1/2, while the Union Mills' goods that were sold at $3.37 1/2 for 1913 are quoted at $3.62 1/2 for next season, and $3.50 numbers have been changed to $3.75. There is less advance asked on the higher grades of men's fleeces, such as High Rock and Union Mills' Standard. Those that were sold last year at $3.80 may be bought at $3.90, but as this price is rather close for

the majority of jobbers, the sales are quite limited. These manufacturers are, however, finding a loophole by making men's suits at $7.00 and it is understood that the trade is taking these heavy suits in large quantities.

The Hover Mill of Columbiaville are making extra heavy weight fleeced shirts and drawers, running from 13 1/2 to 14 pounds on 24-gauge and the agents for this line state they are about sold up for the year at $3.75.

The weather during the entire month of November and nearly all of December was very mild throughout the country and as a consequence of this, all lines of heavy weight underwear suffered and the duplicate business during these two months was hardly sufficient to keep some mills going and on account of this, we find that several manufacturers have started earlier than usual to make up orders that have been given for fall 1914.

Most lines of wool goods remain the same price as last year, manufacturers meeting the lower wool quotations by putting in better grade and maintaining the same price, but the New England Knitting Co. has made some reductions as well as improved some of their qualities. The line quoted at $11.00 last year has been changed to $10.50 and the $13.00 quality to $12.00.

One of the new creations in men's underwear is a flat wool combination suit made by Rockwood & Co. in both medium and heavy weight at $19.50. The new feature consists of a double thickness of the cloth entirely around the garment and it has the appearance of an abdominal band being sewed to the outside of the suit. It is claimed as an advantage for it, that a man who has been accustomed to wear shirt and drawer, may change to combination suit and still have the double thickness of cloth where he may feel it is needed and at the same time, have all the advantages of a suit.

The Cooper Underwear Co. of Kenosha, Wis. have started an action against Meyer, Hess & Co., jobbers of Chicago, for selling an infringement on their Klosed Krotch patents and the result of this action will be watched with considerable interest by all who make or handle underwear.

HOSIERY

It cannot be said that the fleeced hosiery market is in as good a position as either the underwear or the wool hosiery. All the lines have been opened at prices that most makers and selling agents seem to think are too low for comfort. Notwithstanding this, the business has not been placed at all freely, and buyers are apparently leaving much of it to be done on their trips to the market in January. The mild weather has, of course, had some effect and stocks have been moving slowly during the past six months and there are some buyers who claim they will carry over large quantities of fleeced goods and the placing of orders for another season can be done more intelligently by the middle of January, by which time buyers will have more knowledge of stocks being carried over.

Women's hem top fleeced goods, weighing two pounds, are quoted at 95 to 97 1/2 cents and the same weight with ribbed tops at $1.00 to $1.05. It is said that some orders were taken at 2 1/2 cents higher than these prices, but the buyers have been notified by the manufacturers to reduce the prices on the copies of the orders.

Boys' three-pound fleeces have been sold as low as $1.10. This class of goods is quite scarce and indications are that quotations will be 2 1/2 to 5 cents higher.

There is a decided scarcity of all low grades of hosiery and especially so on children's lines, it being practically impossible to place any orders now for 12 1/2 or 15 cent grades of light weights for delivery any time before June first.

The 25-cent silks, or more properly speaking, fibers, are in a well sold up condition and as the delivery dates draw near, it is discovered that many manufacturers are considerably behind in their schedule and also that prices have been advanced by those who are in a position to take on any further business. Lines that were sold in July last at $1.85 have been advanced to $1.95 and the $1.90 to $2.00. Just now much is heard in regard to the difficulties attending the making of these goods. Some manufacturers claim that the percentage of seconds is very

much larger than was anticipated when basing their early prices and there are some who started in to make this class of goods this season who state they want no more of it on account of the difficulty in making.

CHEMNITZ REPORT

Prices on hosiery are high and firm and in consequence, orders from the United States are small. A number of American buyers have been here, but their purchases were confined to absolute necessities, as they were unable to place the stock orders as they had intended, owing to the high prices being asked.

One line that has sold exceedingly well, is the infants' socks and all makers of these goods are sold up for several months to come. Striped patterns are taken mostly, Jacquards being little in demand. Some styles made with turnover tops have sold very freely.

Many calls have been heard for ladies' cotton hose at M5.30, but most manufacturers are unable to supply qualities that are satisfactory at less than about M6 and they have also been unable to supply fine mercerized lines at M6.60, as M7 to M7.50 was as low as any desirable goods were priced.

Split feet hosiery are as scarce as ever and M5.50 is the minimum price for spring delivery.

American buyers are not taking lace hosiery, except in a few extreme novelties, but the European markets are calling for quantities of popular priced neat Jacquard effects. The demand for tans is of small proportion. The call for white is increasing very rapidly. The coming season promises to be one of a good range of colors and orders are being placed quite freely on cerise, Royal blue, Kelly green, gold, rose, smoke and Copenhagen.

The first statistics for cotton manufactures in the United States were in 1839, at which time there were 1,240 establishments, giving employment to 72,119 persons, with products valued at $46,350,453, while in 1909 there were 1,324 establishments, giving employment to 387,711 persons, with products valued at $628,391,813.

A BRUSHED HOCKEY CAP

BY BRISTOL

A very popular article of wearing apparel for boys and girls alike is what is called the "brushed" hockey cap. This cap can be made in various ways and on different mal es and sizes of machines with stripes or without, but the largest seller is one of solid colors and mixtures made by using different

A BRUSHED HOCKEY CAP

colored yarns on a 6 feed machine. When brushed up this makes some very good mixed shades. The plain and mixed color caps are made to the best advantage on a 6 feed machine, every other feed tucking or what is called making the half cardigan stitch. The caps are made in lengths of about 34 inches with a small piece of plain stitch between each cap to show where to cut after it is brushed. The 6 feed machine must be 8 inches in diameter cut to 96 needles in the dial and same in cylinder. This will make about 20 dozen per day of 10 hours.

In adjusting the machine for this cap, draw all the stitches possible on the cylinder needles without getting drop stitches. At the same time raise the dial up as high as possible. The cap must be knit very loose

as it gets tighter with the brushing. A cap made 34 inches long after brushing and finishing will measure from 7 1/2 to 8 inches wide and 9 inches long, with a 3 1/2 inch roll turned up.

The finishing of the cap is very simple. A girl uses a heavy needle and coarse cotton yarn after doubling the cap. The needle is run in and out around the cap and then drawn up, which makes it come into a round bunch when it is sewed through and through to hold it. The cap is then turned right side out and the pompom sewed on. After a girl is experienced in this work she can finish from 50 to 60 caps a day for which she would be paid 3 1/2 cents per dozen. The pompoms are usually made out of waste yarn. They are put together in rolls of about one yard and tied off every 3 inches. They are then cut between and sewed on the caps. These pompoms cost about 1 1/2 cents per dozen, and they can be made very fast.

In making the caps on the 6 feed machine, 4 ends of 2/16s cotton should be used on the cast-off feeds and 3 ends of 2/28s worsted on the tuck feeds. Three ends of 2/12s cotton yarn on the cast off feeds with 3 ends of 2/20s worsted when finished will give a cap weighing about 2 pounds that sells at $3 a dozen. Three ends of 2/10s cotton on the cast-off feeds and 3 ends of 2/18s worsted will give a cap weighing from 2 3/4 to 3 pounds when finished, to sell at $3.50 per dozen.

Some very attractive combinations are made by using 3 ends of any of the above sizes of cotton yarn, with 2 ends of worsted of one color and one of another, the cotton to be the shade of the 2 ends of worsted. The daily output would be about 8 dozen. There should be a great demand at the present time for these brushed caps. In brushing the goods they must be sewed on the raveled end before brushing and then brushed in strips of two or three dozen lengths, always putting them through the brushes twice. If the worsted has a hard twist they may have to be put through three times. The goods should be carefuly examined and mended before brushing, as it is impossible to mend after brushing.

LACK OF DISCIPLINE IN THE MILL

Editor Textile World Record:

I have read the experiences of "Denbigh" in the November issue of your magazine. It seems to me that a man with his reputation for overcoming troubles should not have played the game so badly in this instance. If, instead of fighting the forelady and her coterie of girls, an encircling flank movement had been tried, they might have all been taken into camp. A little of the wisdom of King Solomon might have been effective. A superintendent will not command much respect who allows a salesman to sit smoking all day in a workroom and full of inflammable material at that. The man of whom so much was expected had to admit his defeat where success would have been easy.

Rutledge.

FLEECED LINED KNITTING

BY TRENTON

A knitting mill in which I was employed some time ago, was making fleece lined underwear. The frames were built much like the regular latch needle frames that have a revolving dial and cylinder. The new frames, however, had an extra cam ring on top of the dial cam. The extra ring used a sinker, shown at Fig. 1, instead of needles. The sinker was about 1 1/2 inches long and 1/32 inch thick. These sinkers formed a loop inside the cloth and could be regulated for any length of loop, in other words, for any thickness of fleece. The regular stitches tied the loops and held them fast.

The first attempt to run the frame alone, after putting the belt on and starting the frame, resulted in a grinding smash before a yard of cloth was knit. I found about a dozen dial needle butts turned over on taking off the dial sections. This frame was the first to have the dial cap cut in sections, saving time and labor in many ways. The cylinder was also in sections and this saved the trouble of taking a frame down to get at certain parts of the cylinder. After fixing up the dial and getting ready to start again, I gave the needles plenty of oil while running, but had another dial smash. This happened several times before I took the frame

down to see how the cams looked. It was a lot of work to get the dial cap on the bench, as each sinker and needle had to be pulled out separately. There was a sinker for every needle, and a fourteen inch frame cut ten to the inch has about 444 needles. Nevertheless I got them out and set the dial cap with section on the bench. There seemed to be nothing wrong, each cam appeared to be set right with plenty of room to move around. We put it back and started up again. This time it ran about an hour before it stuck, and it stuck so fast that we could not move the hand wheel. We looked the dial and cylinder over, tried the needles to see if they were fast and did everything a knitter naturally would do before starting to take it

FIG. 1

down. We got as far as the extra cam ring when we found that about a dozen sinkers were wedged into the stitch cam. To fix this up was beyond me, so I got the designer of the frame to fix it while I looked on. He took out about a dozen screws that held the ring fast to the dial cap, lifted it clear, put it on the bench and looked it over. There was not very much to see, for nearly everything was inside the ring, which was about an inch thick, three inches high and fourteen inches in diameter. This arrangement is shown at Fig. 2. Taking out another dozen screws he let the ring come apart, showing the inside cam arrangement, Fig. 3. The cams in this ring appeared to be too thin, letting the sinkers rub against the ring instead of having guard cams to steady them. I explained this to the designer and he finally took the ring to the shop, had about 1/16 inch taken off inside, put in a thicker cam and when the frame was set up again it was surprising to see how easy it turned. That put an end to the smashes in the sinker ring.

While the frame was apart we took a look at the dial cap arrangement to see if we could discover any reason for the needle butts turning over. The frame was built like the regular standard frame with the exception of the extra ring for the fleece. The dial and cylinder were each made in sections, the cylinder, as far as I know, never causing any trouble. We were frequently troubled with dial smashes. These smashes continued for some time until it finally occurred to me that the section was the cause of them, but

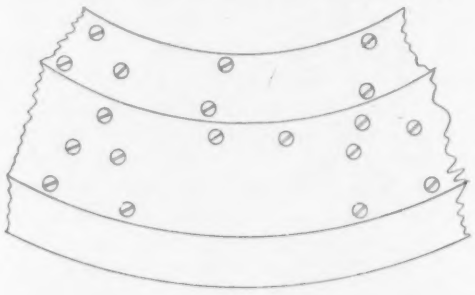


FIG 2

how or where was the question. The smashes happened most any place, at the ends or center of a section. Some days we would have as many as five to ten, and all seemed to be alike; about 12 to 15 butts turning over. The overseer of knitting instructed me to spare no expense to get the frames in working order. I took a day off and went over to the shop to see if I could work out an idea I had in mind. The superintendent of the shop, the owner of the mill, their setting-up man and I went into the matter from all angles. We talked cams and angles, degrees and sections, but all without avail. My idea was that the sections could not be kept tight and rigid enough, and I still believe so. Years later, in Canada, a knitter told me that the dial smashes in this same style frame, built the year before, were putting gray hairs in his head. There is on the market today a new style of machine built in sections, very much like the old machine, and which does not smash. These sections are fashioned so firmly to the dial cap that it is almost as one piece.

Another fault with the frame on which we were working, was the take-up arangement, which rolled up the fabric as fast as knit. At times the goods would not roll up and if the take-up happened to be in fairly good order the rolls were loose and the fabric would drag around the floor or slap against the legs of the machine. This take-up worked from four cams with a plunger rod that set into a gear. The gear, or ratchet, was on the end of the cloth roller. This roller was supposed to go around and roll the cloth up. These parts were made of cast iron, except the plunger which was of cold rolled steel.

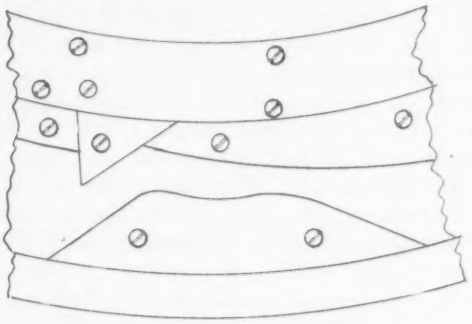


FIG. 3. INSIDE CAM ARRANGEMENT

When we had about thirty frames it took one man to keep these take-up cams and ratcher dogs filed smooth. Sometimes the strain from a short push, against a heavy spring of the plunger rod would slide the rod outside the cams and stick the frame. When we could no longer make them roll up, I got discouraged and was ready to leave. I did not leave, however, but we started at once to put sheet iron cams under the frames. These were fastened to the take-up plate and turned with the frame. It took some time to get them all fixed up and when other new frames came in they contained these cams.

In the sinker ring there was a space between the two guard cams that allowed waste or lint to collect. This waste was similar to that found behind the dial needles in a dirty dial. The yarn used on the back was 9s, soft twist, and made lint freely. The sinkers pushing down the long loops formed lint on returning to the idle position, this lint forming between the guard cams next to the stitch cam. Many times a frame would run until the amount of lint in the guard cams would not allow the sinkers to return to idle positions and the belt would not pull it. This meant taking the ring off and pounding the sinkers out. This bad feature was overcome by cutting out a hole about an inch square in front of the guard cams, that is, outside the ring above the sinker tops and cutting away to clear between the cams. This let the waste form and when packed hard would force itself outside, or the knitters would pick it out with a needle. Even after they were in fairly good condition the knitters used to put bent needles in the stop motion tumblers to hold the ends up. We used a poor grade of No. 10 sliver and white carded yarn. Nearly all the cones were chafed, and it was troublesome to get a new set of yarn started. The ends ought to pull down, they did pull down in the face, but the bent needles prevented the frame from stopping. This went on for some time before I found out the reason why the stop motions were not in order. The knitters would rather put on a quarter than to put up ends. Very often when the stitches

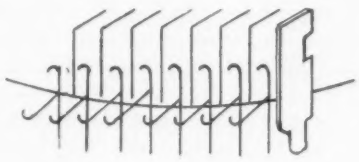


FIG. 4

ran off the needles we have a fine dial smash.

We could not oil the needles often, for the oil streaks ran too far, made too much waste and the goods were not washed. We had a habit of heating vaseline and pouring it in both sinkers and needles just before stopping at night. We also had trouble with holes, those ordinarily found in ribbed goods and which came from the sinker. The hole generally left a couple of loops of the backing thread showing plainly. If too many holes were made, we generally put in a black thread in the back and counted from that. There was an adjusting screw for the sinker stitch cam that worked loose sometimes and worked itself into a short loop, and when

too short would pull the stitches away from the dial needles. These sinkers ran through a slot cut in the dial and pushing the backing thread between the dial needles, shown at Fig. 4, and when too short would drag the dial stitches with it and cause a hole. Putting a check nut on these adjusting screws stopped most of this trouble.

MILL EXPERIENCES

Under this head we will publish from time to time stories from practical mill men, telling of vexatious and unusual difficulties which have occurred in different branches of mill work, and how they have overcome them. We invite mill men to send us an account of such experiences. We pay, of course, for all that we use. Facts told just as you would tell the story to a friend are what we want, not fancy writing.

KNITTING MEMOIRS

BY CYMBAL

A firm in Central New York decided to add ten more knitting frames to their stock. Statements as to prices and production of different makes of machines were obtained. Selling agents camped out in the office. The air was full of knitting technology, cams, take-up, power and speed, all being handled without regard for truth. All this talk led up to three machines of different makes being put in on trial. Of these three we have to deal with only two, as one machine was out of running order on account of various troubles we had with it the first few days. One of the machines was a standard make generally used by the trade. The other machine was a new style made by a new concern and no one knew much about it. All these machines were running side by side, on the same class of goods, at the same speed, and all the other conditions were the same. The boss knitter, an old timer, would show no preference, still it was up to him to say which he liked best. The manager leaned toward the new style, chiefly on account of price. The knitter looked wise when spoken to about either frame, but secretly had his mind made up before the frames had arrived. He liked the old standard make so it was up to him to help out the agent if the manager decided on the new style. A few days later the manager and knitter had a long session in the private office, the manager being in favor of the new style; the knitter wanting the old make. They decided on a last test, the weighing of a day's work of ten hours. The agents were told the sale depended on the day's work and to start on the following day.

The machines were started on time next morning and ran without any trouble until noon. A few minutes before the time to stop the knitter accidentally put his hand on the frame of the old standard make and broke an end out, the cloth running off the needles. The man in charge of this machine was terribly angry but cooled off and said he was about ready to stop any way. The knitter promised to have his frame ready to start up on time, so he would lose nothing by his blunder. Both agents started at the same time and both frames ran well until it was time to quit. Then the cloth was cut off and weighed. The agent of the old style machine was twelve pounds ahead. The other agent tested the scales, reweighed both rolls several times, scratched his head and muttered, "I don't understand it," and stood back a beaten man. He doesn't understand it yet unless he happens to read this.

The agent of the old style machine and the knitter had met in a hotel one evening to talk matters over, and on the following night the knitter worked overtime. First he knocked out a piece of the bottom of the box that holds the cloth under the frame, then he bored a two-inch hole in the floor under the box. Then going to the elevator well about four feet away he tore away a piece of tin, revealing about a foot of space between the floor and ceiling. Into this space he put part of a roll of cloth that had come from the old style machine the day before. Going back to the hole in the floor he fished with a piece of wire and caught the end of the cloth, pulled it through the floor a few inches and set the box on it. He then went home and waited his time to finish the good work. It came the noon he "accidentally" broke an end out, and the angry actions and words of the agent was a part of the act. When he picked the work

back on the needles he used the end that came through the floor, instead of the end that run off. He had not figured on being left alone with the frames or he would not have made all the arrangements he did. As it was he only pulled the short piece of work out of the box, threw it on the pile ready for the washroom and pulled the long piece through the floor into the box. The agent for the old style frame got the order.

PREVENTION OF RIPPING IN KNIT GOODS

A knitting device recently patented in this country and shown in the accompanying illustration, is designed to form barrier stitches for preventing the knitted fabric from ripping in case one or more stitches

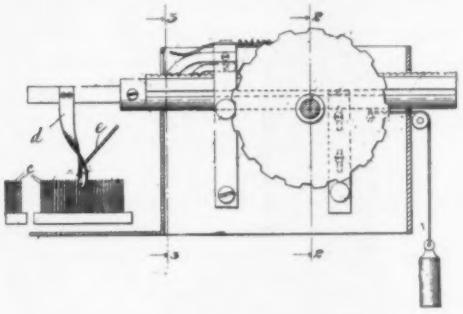


FIG. 1

break. These barrier stitches are especially needed in stockings, as it frequently happens that in the upper portion of the stocking one or more stitches are broken by the gripping device on stocking supporters. The new device consists in the combination with an ordinary knitting machine, of a thread guide, which is arranged in opposition to the knitting needles and is given such a movement as to feed an auxiliary thread in form of a coil around each knitting needle. The coil forms a barrier between two portions of the knitted fabric, as for example, between the upper and lower portion, and prevents the ripping from extending from one portion of the fabric to the other. It is immaterial where the barrier stitch is formed, but is preferably knit along the lower edge of the doubled-up upper portion of the stocking.

Fig. 1 is a vertical section of device, illustrating also a part of the knitting machine to which it is applied; Fig. 2 is a cross section on line 2—2 of Fig. 1; Fig. 3 is a cross section on line 3—3 of Fig. 1; Fig. 4 is a detail of construction; and Figs. 5 and 6 illustrate the method of operating of the device.

The device for forming the barrier stitches comprises a guide for an auxiliary

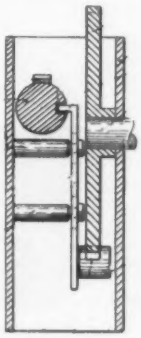


FIG. 2

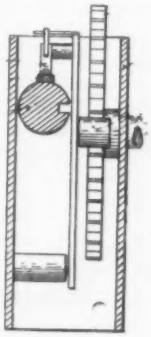


FIG. 3

thread, e, Figs. 1 and 4, arranged in opposition to the knitting needles and capable of swinging through the space between two adjoining knitting needles and of moving crosswise to the set of the needles. Owing to this double motion the guide feeds the auxiliary thread in form of a coil around each knitting needle, Fig. 5, this thread embracing each longitudinal thread.

The guide, d, is in form of a warped bar, the lower end of which is provided with eyes through which the thread, e, coming from a spool is passed. The lower end is of a thickness corresponding to the space between two adjoining knitting needles, c, so that it can freely swing. Its lower edge is rounded so that, while it swings through the space between two adjoining knitting needles, it will not touch the yarn. The guide is fixed to the extension of a shaft, arranged parallel to and at some distance away from the edges of the knitting needles. The shaft is held in a casing so as to move longitudinally and also rock around its axis. The longitudinal feeding movement is effected by means of a rack with which two pawls are connected. The pawls are pivoted to a spring actuated

rocking arm carrying a roller. A disk fixed on a spindle that is operated by hand, is formed on its circumference with cam shaped projections which act against the roller, imparting a swinging motion to the lever. The cam projections are so constructed that by the swinging movement of the lever, the pawl will feed the shaft intermittently forward a distance equal to two knitting needles. A weight tends to retract the shaft after each movement, this retraction being limited to a distance equal to the thickness of an individual knitting needle.

The rocking movement of the guide is

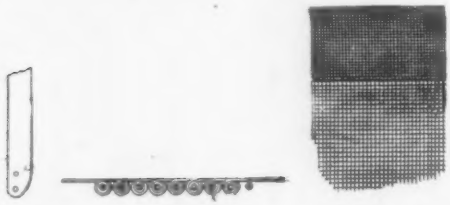


FIG. 4 FIG. 5 FIG. 6

effected through the medium of a vertically reciprocating bar, which has longitudinal recesses whereby it is movably mounted on stationary projections. This bar carries a roller, Fig. 2, that is acted upon by the disk cams. At its free end this bar is formed with a nose which engages a longitudinal groove in the shaft. As the bar through the medium of the roller and the cam disk is caused to reciprocate the shaft and consequently the guide are given short swinging movements. The two rollers are so arranged that one will enter onto the ascending part of the cam projections, earlier than the other, and the shaft receives one and then the other movement.

The operation of the device can be effected by a handle, not shown. As this disk is revolved the shaft will be first rocked to swing the guide between two adjoining knitting needles, then it will be fed a distance of two knitting needles forward, moved back one needle, then again swung in reverse direction and again fed a distance of the two knitting needles, and so on. During these movements of the auxiliary needle the auxiliary thread, e, will describe the path indicated by the coils in Fig. 5. When the work is finished the thread, e, forms the seam, Fig. 6, which acts as a barrier between the lower and upper end of the fabric.

METHOD OF MAKING HOSIERY

An improved construction for hosiery which is illustrated at Figs. 1 and 2 has recently been patented in this country. The object is to provide a stocking that can be worn and held in proper position without the use of garters or hose supporters. Two

FIG. 2

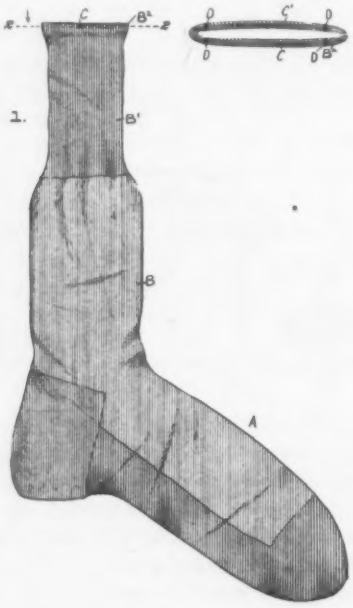


FIG. 1

elastic bands are arranged in the hem or welt at the upper end of the stocking, the ends of the bands being secured to the hem and the ends being spaced apart at the front and rear of the stocking.

Fig. 1 is a side elevation of a stocking provided with the improvement; Fig. 2 is a sectional plan on the line 2—2 of Fig. 1.

The body of the stocking consists of the usual foot and heel portion, A, and the leg, B, having a contracted, closely woven top portion, B′, terminating in a welt, B^2. Within the welt, B^2, are arranged two elastic

bands, C and C′, fastened at their ends by stitches, D, to the welt. The bands, C and C′, are arranged in the sides of the welt, B^2, and the fastened ends are spaced apart at the front and at the back of the welt.

When the stocking is drawn in position on the wearer's leg the welt or hem, B^2, is expanded and the elastic bands, C and C′, are placed under tension to hold the sides of the welt against the sides of the leg, holding the stocking in position without the use of hose supporters or garters. By providing the elastic bands, C C′, only at the sides of the welt the circulation of the blood in the wearer's leg is not interfered with as in the case with garters or elastic bands. By having the elastic bands, C and C′, separated at the front no undue pressure is exerted on the leg. The rear ends of the elastic bands, C and C′, terminate some distance from the rear seam and consequently do not exert undue pressure on the seam in an inward direction to avoid undue pressure of the seam at the back of the leg.

—÷—

MANUFACTURERS OF FRINGE

Editor Textile World Record:

Can you give me the names of the manufacturers of the enclosed sample of fringe?

Maxwell (2251).

I would refer "Maxwell' to the following list of manufacturers who make this grade of goods:

R. S. Rosnan & Co., 9th and Noble Sts., Philadelphia, Pa.

Largeman Bros., 438 N. 13th St., Philadelphia, Pa.

Bernstein, Kaufman Co., 10th and Race Sts., Philadelphia, Pa.

Lipper Mfg. Co., 317 N. Darier St., Philadelphia, Pa.

Hensel, Colladay Co., 12th and Wood Sts., Philadelphia, Pa.

Obersterbrink & Co., 104 S. Fourth St., Brooklyn, N. Y.

C. E. Hertlein, 334 Fourth Ave., New York City.

I would also suggest to "Maxwell" that although the sample submitted is made on a loom, the identical goods can be made on a flat knitting machine and it would take an expert to tell the difference. It would also be considerably cheaper and answer the same purpose. Ruthven.

—÷—

KNITTING SILK

Editor Textile World Record:

I would like to get some information on running 3/20s silk on a circular latch needle machine, cut 12 needles to the inch. I am running this now with a strong tension on the threads, but it does not work very satisfactory. I would like to know if this can be run with a tension and have it so there will be elasticity to it. This is run with 8 ends on an 8 feed machine. Maurice (2263).

In knitting silk there are numerous difficulties to overcome which do not confront a knitter when knitting cotton or wool. To obtain the best results the dial should be adjusted so that the dial needles are about 1/16 inch above the top of the cylinder and the stitch cam on the dial needles adjusted to make the needles draw in about 1/16 inch from the edge of the dial. Make the stitch on the cylinder needles about 6 to the quarter inch, and if the yarn stand is about four feet high, enough tension is given to silk by the time it travels up to the top guide and back down again to the needles. Have a fairly good weight on the take-up rollers to pull the fabric quite tight and then as a rather loose stitch is being made the fabric will shrink back about half an inch to every six inches of cloth. It will be necessary to make the article so much longer to allow for shrinkage, but when it has shrunk back it will be found quite elastic. If it appears too loose tighten on the cylinder needles. It is not advisable to lower the dial in order to make the fabric tighter and more elasticity is imparted by not making the fabric too tight.

It is a good plan to use lard oil on a piece of felt or cloth when running silk on a latch needle circular machine. Put this on the machine not too close to the needles so that the silk will pass over the oily cloth very lightly, receiving enough oil to make it run well without showing any stains. "Maurice" may be using a cylinder needle machine with sinkers to cast off the stitch. In this case it is not advisable to have too much tension on the silk. Use lard oil and not too tight a stitch. If the lard oil does not make a good fabric without any weight, use weights until a difference can be noticed.

Cleburne.

Dyeing, Bleaching, Finishing, Etc.

THE ANALYSIS OF WEIGHTED SILKS

BY LOUIS J. MATOS, Ph. D.

Owing to the agitation throughout the country in the matter of "pure textiles," in consequence of the various bills that have been introduced in Congress and intended to protect buyers of fabrics, attention is at once directed to the means at hand to determine the quality of fabrics offered for sale. For a long time, silk has been under suspicion, in view of the occasional attacks that have been made against it as being "loaded" or "weighted" with substances that were not silk, and which were present in such quantities as to be regarded as injurious adulterants. Owing to the comparatively high initial cost of raw silk and the practical impossibility of adulterating it with any other fiber—even with artificial silk—the chemist was called upon to devise the means of so treating silk with suitable chemicals to increase the weight, while the luster remained unimpaired. As a consequence the chemist was also compelled to work out a method of analysis that would enable the silk manufacturer to ascertain what his competitor was doing.

WHAT SILK IS WEIGHTED WITH

Silk for colors may be weighted with tin in combination with phosphoric acid and silica; with alumina; lead; antimony; tungsten; glue and sugar. Tin is the commonest of all weighting materials, and is used because the results are more constantly uniform, and besides the process, when once understood is easily carried out.

For blacks, the tin, phosphoric acid and silica process is extensively used, but the iron-gambier (tannin) process is more generally employed because the weighting with iron serves also as the "mordant" for the logwood which is the chief coloring matter employed by dyers for producing blacks. Lead and antimony have also been found on black silks, but their use as weighting agents for blacks need not be considered.

DETECTION OF WEIGHTING AGENTS ON SILK

This is not particularly easy. Besides requiring familiarity with chemical manipulation, one must know unfailingly the qualitative reactions of the more commonly occurring chemical elements. The tests are as follows:

Digest a portion of the suspected silk in a small quantity of hot water for a few minutes, decant equally into three test-tubes. In one, add 2 to 3 drops of ferric chloride solution; a dark coloration indicating the presence of tannic acid. If no coloration appears, add a few drops of tannic acid solution to the second test-tube, when, if a cloudiness appears, glue or gelatine is present. If no change is observed, add to the third test-tube a drop of dilute hydrochloric acid, boil to "invert" any sugar present, and add a few drops of Fehling's solution, observing the formation of copper oxide due to the presence of a reducing sugar.

The presence of Prussian blue in silk is not to be taken necessarily as an "adulterant" or weighting agent, for the reason that iron-logwood blacks on silk almost always have a treatment with yellow prussiate of potash—called "blue dyeing" to assist in imparting a "bloom" to the black, but which adds an inappreciable amount of weight to the silk.

It is detected by boiling a sample of the suspected silk in very dilute soda to remove as much color as possible, then wash well with water, acidify with hydrochloric acid, and add a drop of ferric chloride, when the characteristic blue color of Prussian blue will appear.

Iron is most certainly detected by igniting a small clipping of the silk in a porcelain crucible, cooling, dissolving the ash in a drop or two of hydrochloric acid, dilute with water, and add a drop of yellow prussiate of potash when a blue color at once appears if iron is present.

Tin is detected by igniting the sample of

silk in a porcelain crucible, digest in hot concentrated hydrochloric acid, dilute with water, and treat with hydrogen sulphide gas. If a yellow precipitate appears, it is certain that tin is present.

Phosphoric acid is detected by means of the reaction with molybdate of ammonia solution. Alumina is detected by noting a precipitate upon the addition of dilute ammonic hydrate.

As a general rule it is safe to prognosticate the probable weighting agent in a given sample of silk by noting the character of the ash left in the crucible after igniting. Some samples of silk carry so much mineral matter that the woven structure of the silk is perfectly retained in the form of ash. If the ash is brown, or reddish brown—iron is positively present. If the ash is slightly yellowish while when hot and white when cold, tin is very probably present.

Sometimes the ash of black dyed goods shows both white and brown threads in opposite directions, i. e., warp and filling, consequently the fabric must be dissected before any chemical tests can be safely applied.

QUANTITATIVE DETERMINATION OF WEIGHTING

There are several methods in use by different chemists for determining the amount of weighting on silk, and it is a matter of great delicacy to pronounce judgment upon any one as being the most accurate, as it is possible that injustice might be done to the other methods. One thing is certain, that several suitable methods when worked out parallel on one sample of silk do yield somewhat different results, and it will take considerable time and work to determine positively the method best suited for general use by both silk mills and commercial chemists.

At present, the most common method consists of determining the moisture in the silk by drying and weighing, then stripping the silk of its color by digesting with dilute hydrochloric acid, washing, again drying and weighing. Digest the dried residue with hydrofluoric acid for 1/4 hour at 140° F., wash digest in dilute hydrochloric acid for 1/4 hour, again wash, boil in a weak soap solution for a few minutes, then in a 1 per cent. solution of sodium carbonate for 1/4 hour, finally wash well with distilled water, dry and weigh. The results of this analysis show:

a Moisture.

b Coloring matter and other substances removable in dilute hydrochloric acid.

c Tin weighting.

d Residue of real silk.

The total should be 100 per cent., but as a general rule, there are errors that creep in chiefly during the digestion in hydrofluoric acid, where it is practically impossible to ascertain beforehand when the tin-phosphate-silicate is completely resolved.

The methods for colored silks and black silks, based upon the determination of the actual amount of true silk present, and calculated from the total amount of nitrogen contained in the silk fiber as ascertained by the Kjehldahl method is the method most likely to survive where accuracy is essential, but it requires somewhat more time to carry out than the other methods, which though yielding good results are carried out with reasonable speed.

The Kjehldahl nitrogen method for colored silk is as follows:

Two grams of the silk sample are cut, weighed accurately, dried and again weighed and digested at the boil in an Erlenmeyer flask for 2 hours with 100 ccs. of soap solution (30 grams per liter); afterwards drain off the soap solution, rinse, and add 100 ccs. solution of carbonate of soda at 1 1/2° Be. and digest boiling for 1/2 hour. The soda treatment is necessary and must be done thoroughly in order to ensure elimination of all possibly present ammonia salts. Wash, dry and treat with 30 ccs. concentrated sulphuric acid and a small quantity of anhydrous copper sulphate. Digest in a round bottomed flask on a sand bath for 4 to 6 hours, or until the contents of the flask become green. Cool, add permanganate of potash solution until the solution becomes intense green, then transfer to an Erlenmeyer flask, add caustic soda solution carefully to alkaline reaction, and distill off the

ammonia in a Kjehdahl apparatus, collecting the ammonia in 25 ccs. normal sulphuric acid, and "back titrate" with normal alkali. Each cubic centimeter of normal acid consumed corresponds to 0.017 grams ammonia (NH_2).

For black dyed silks:

Take 2 grams of the silk sample, digest in a 1 per cent. solution of hydrochloric acid at 140° F., during which it is noticed that the solution becomes intensive red. Repeat the digestion with fresh portions of acid until only a faint rose coloration at most is imparted to the acid solution. Wash well, digest in a boiling soap solution, then in a solution of soda, and finally washing thoroughly and dry. The nitrogen determination is then carried out exactly as described above. Every 14 parts of nitrogen as found by the titration corresponds exactly to 76.38 parts of fibroin or pure silk fiber substance.

GREASE-DYED WORSTEDS

By Our Regular English Correspondent

Bradford, Eng.

A reference made in an earlier article to the practice, sometimes adopted in Yorkshire of dyeing worsted goods in the grease has elicited a request for fuller information. Grease-dyeing has been known to be done for at least two reasons, of which the chief one is the apparent increase of weight. The cloth in the gray is sent to the commission dyer with instructions that he is to return "weight for weight;" and as the practice of weighting with metallic salts has fallen into disfavor, that of leaving the grease in the goods has taken its place. The goods dyed in this way are principally serges and are largely cotton warp cloths. In any case the worsted yarn in the fabric is oil-spun upon the Bradford system and contains all the grease that has been added by the comber or spinner.

Grease-dyeing has in certain cases been begun at the instance of dyers who wished to cut down the cost of operation in treating light cotton warp stuff goods of qualities made for export. While not regarded at first as satisfactory, some dyers have succeeded in establishing a new and lower standard of excellence and are able—as the saying goes—"to put the stuff straight from the street into the dye-box." It is of course troublesome and expensive to go over these goods in the gray-room with soap and water to remove patches and stains and thereafter to scour them fully in the machine, but until recent years this was always done.

A possible third reason for leaving the grease in the fabric is to get a firmer and fuller handle out of qualities of material that would be harsh were they scoured to the bone. Economy is, however, the main motive and the process of grease dyeing is not one of greater complexity than usual, but rather of less. The fabrics are not scoured, but are passed straight to the crabbing machine to be set. They are dyed with the ordinary colors used for wool goods and nothing is known of any attempt to dye the grease itself. After dyeing they are washed-off in the regular manner and this, while removing the excess of loose color, does not dislodge the oil. After drying upon the tenter-frame the goods are pressed. How the goods are pressed depends on the character of the fabric rather than on how they have been dyed. There is, however, one consideration of moment to users of the ordinary upright hydraulic hot press. The grease in the fabric spoils the press papers and makes them impossible for further use on scoured-dyed goods. The point is not material to users of rotary presses and it is hardly to be doubted that in treating light goods the rotary press is the one to use. For heavy cloths the hot press is regarded as indispensable in Yorkshire.

Some common black and blue serges which would sell only as 16 ounce cloth if scoured, sell as 18 ounce dyed in the grease. This fact constitutes the main inducement to adopt a method which is objectionable in itself and against the interests of the wearer. The grease of course rubs and stains white collars; it retains dust and causes the cloth to look shabby before its time. The practice cannot be thought to add to the good repute of worsteds or to be in the permanent interests of those who adopt it. Although it is extensively adopted in dyeing

common worsteds for certain markets, it is at the same time extensively condemned. If the system become universal the public would soon tire of it and the fictitious saving of 10 per cent. or so of weight would cease to be of advantage to anybody. Probably the effect would be to put a premium on dry-spun worsted goods and on carded woolens. It is as well to keep the probable results in view.

BLEACHING AND MERCERIZING COTTON PIECE GOODS

BY DEMAIN

We have had trouble lately in the bleaching and mercerizing of cotton piece goods and our method of overcoming the difficulties may interest other bleachers and finishers. We were bleaching some heavy goods, such as pocketings, drills, sheetings, shirting, etc. After the pieces were sewed together, singed and steeped, they were run through a washer into the kier and charged with a caustic soda and soda ash solution, 130 lbs. caustic to 60 lbs. of soda ash. We had a three-ton kier and the liquor came about 6 inches above the goods. If the caustic solution did not cover the goods when it was put in the kier we added more water so that the goods were covered, thus avoiding air holes and damage to the top pieces.

After the kier was full and the goods ready for boiling we put on the cover, opened the air pipe and put on steam. It took about two hours to set the kier well. When the kier was free from air the air pipe was closed, but leaving a little space so when we saw steam coming from it we knew we were getting an even circulation. The goods were boiled at 12 to 15 pounds pressure for 10 to 12 hours. After this the waste pipe was opened and the waste liquor run off. It took about two hours to let the pressure down. Cold water was then run in until nothing but clear water came from the waste pipe. The goods were then run from that kier to another kier where they were given a bath in a solution of 75 lbs. of soda ash to 3 tons of cloth. We ran this liquor off as we did in the first kier. After the kier was cooled the goods were taken out and run through a large washing machine and chemicked at 1° Tw. They lay in the chemic solution for 5 hours, when they were washed and then soured in sulphuric acid at 3/4° to 1° Tw. for about 4 hours. After souring they were rinsed well. In most cases the goods would come out clear and bright, but occasionally they would be cloudy and streaky. The first time this trouble arose we put the goods back in the chemic and sour baths, but this did no good. We had so much trouble that the agent hired an expert bleacher who stayed with us a year, but without results. We then began using muriatic acid for souring and were no longer troubled with cloudy or streaky goods.

After we started mercerizing such goods as pongees, pocketings, sateens, etc., the results were all that could be desired, until one day I noticed that the goods were coming cloudy from the jig or dyeing machine. The chemist then analyzed a piece of the mercerized goods and discovered that muriatic acid was better than sulphuric for souring. When mercerizing the goods after that, we used a caustic soda solution, running it into the padder from the tank. We used no ice to keep it cool. When the goods were run through the mercerizing padder we would batch up a lot of goods and let them lay for some time. We would then frame them through a 40-foot frame and sour with sulphuric acid, then wash in kier and bleach. We mercerized the goods in the grey and bleached with 180 lbs. caustic soda to a 3-ton kier, souring them through muriatic acid at 1° to 1 1/2° Tw. The results were very satisfactory and we had no more trouble with cloudy goods.

I have found the best way to mercerize in the piece is to have a 4-nip mercerizing padder and a 90-foot frame connected with the padder with two water sprays over the frame. Place at the end of the frame two large wash boxes so that the soda will be washed out of the goods before they go into the sour box. Use sulphuric acid at 6° to 7° in the sour box, then wash the goods, place in the kier and boil for 9 hours, using 150

lbs. caustic soda to 3 tons of cloth. Boil at 12 pounds pressure. This process is for mercerizing in the grey. The best results are obtained by boiling once before mercerizing. Run the goods in the kier, using 200 lbs. caustic soda and boil nine hours. After boiling wash once, letting the goods dry partially. Run them through the caustic soda at 54° Tw., sour and wash in kier. Give one more boil in the caustic, using 150 lbs. caustic soda, boiling nine hours at 12 pounds' pressure. Then chemic and sour according to directions given above.

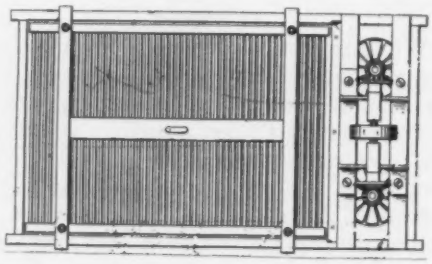
A YARN DYEING MACHINE

A machine for dyeing yarn, shown in the accompanying illustration, has recently been patented and is described as follows: The improvements consist essentially in the construction and arrangement of parts, and in numerous details. Fig. 1 is a plan view of the machine; Fig. 2 is a longitudinal sectional view on the line, 2 2, of Fig. 1; Fig. 3 is an enlarged detail side elevation of a part of the yarn-supporting frame. The dye vat, which may be of any suitable size and shape, is customarily divided into two sections by means of a vertical partition, which is separated for a certain space from the top and also from the bottom of the vat, so as to allow a circulation of the liquor above and below. The two sections of the vat are of unequal size. The smaller section is divided into two parts by a horizontal partition, in which are two openings. A horizontal wheel having suitable blades is set in each of these openings. Each wheel is secured to the lower end of a vertical shaft, which is mounted in bearings in a frame carried on the cross beams of the vat. The shafts are driven by beveled pinions on the upper end of the shafts, which mesh with the bevel gear wheels on a driven shaft, having a belt pulley.

The yarn is dyed in the other and larger section of the vat. In the lower part of the smaller section are pipes through which steam is introduced to heat the liquor.

As the partition which divides the two sections does not extend to the top or bottom of the vat, the liquor is drawn from the larger section into the smaller section, or the reverse. When wheels are rotated in one direction the circulation will be underneath the partition from the smaller section into the larger and over the partition from the larger section into the smaller section. When the wheels are reversed the circulation will be over the partition from the smaller section into the larger section and underneath the partition from the later section into the smaller section. In the dyeing operation it is customary to allow the circulation to

FIG. 1



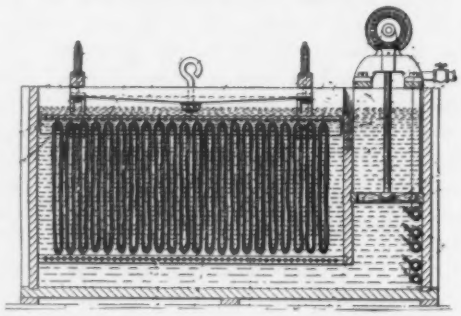


FIG. 2

progress in one direction for a time and then reverse it, as this brings about a more perfect action.

The bottom of the section is formed of an openwork construction consisting of a horizontal series of rods. The frame carrying the yarn comprises two side members, to which are secured uprights fastened to the horizontal supporting cross-bars which rest on the edge of the vat, as shown in Fig. 1. There are, likewise, longitudinal side bars above the side members, which connect the cross-bars, and there is a central longitudinal bar that is provided at its center with a hook to which a lifting mechanism is

attached and operated in the desired manner. The uprights are secured to the cross-bars and side-bars by bolts and washers. The washers are removable to allow the yarn-supporting frame to be adjusted in its horizontal position and thus raised or lowered as desired. The yarn sticks are shaped to fit openings in the side bars, as shown in Fig. 3, the openings being slightly larger than the sticks so that the latter can be readily inserted or removed. Rods are mounted on the side bars at a suitable distance apart. They are held in place by a bar secured to the side bar by screws. In

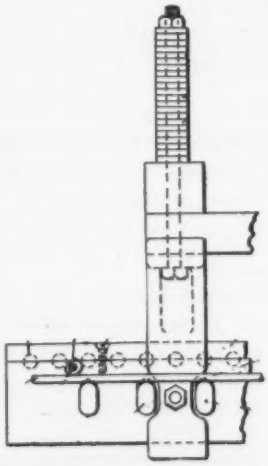


FIG 3

the adjoining faces of the bars are semicircular recesses which coincide with each other and together form circular recesses to receive the ends of the round rods. The rods are so related to each other and are so spaced from the yarn-supporting sticks that the liquor may readily circulate between all of them. Round sticks of this kind, separated at proper distances and supported in the way stated, are found to be much more effectual in permitting an effectual circulation of the liquor than are square or angular sticks.

The most difficult part of the yarn to dye is that portion which hangs over the supporting sticks. By using the sticks described the distribution of the liquor is so complete that it will pass over the yarn on the stick and circulate between the hanks as they are suspended in such a way that the dyeing process will be entirely satisfactory. The yarn sticks are held in place by horizontal strips which lie upon the sticks and are locked firmly in place by small cams, supported on screw studs, as shown at Fig. 3.

EFFECT OF SULPHUR BLACK ON MERCERIZED YARN

Editor Textile World Record:

Kindly advise us what effects sulphur black dyeing has upon the mercerized cotton, that is, whether sulphur or developed blacks will weaken the thread in any manner after they have been applied. Please state which one you would recommend to give the best results and why.

Locust (2126).

The action of the sulphurous acid in the stove is just the opposite to that of chlorine or the grass bleach in the case of linen or cotton. Instead of the impurities being oxidized and destroyed the action of the sulphur is that of reduction. The yellow coloring matter of the wool is deprived of its oxygen, but the leuco compound still left in the wool is capable of taking up oxygen again and regaining its yellow tint. The action is like that of the indigo vat where the indigo loses its oxygen and its color simultaneously and regains them both in the open air or in the rinsing bath. A better analogy is furnished by Magenta. If sulphurous acid is passed through a solution of this dyestuff it loses its color and regains it gradually as it absorbs oxygen.

There is nothing wrong in the above process, but it is the warm rinse that yellows the goods and this should only be slight if water alone is used. Alkali or a fairly alkaline soap would make the goods much more yellow. A plan that is generally considered to be better than stoving with sulphur is to steep the scoured wool for about fifteen hours in a solution of bisulphite of soda at 32° Tw., wring and pass directly without rinsing through a bath of sulphuric acid at 6° Tw. In either case the ordinary way is to correct the yellow with more or less blue, as is done in the laundry. Methyl violet in a warm soap bath is one of the best ways of doing this.

Since the peroxides and perborates came on the market, what might be called a mixed

bleach has found favor. The stoved wool is given a weak bath of peroxide of hydrogen or of perborate of soda. It is a question whether the goods will stand the extra expense, but the mixed process is not so expensive as the full peroxide or perborate bleach. Culebra.

Dye Recipes

The following recipes appear in the Dyers' Supplement, which is issued each month by the TEXTILE WORLD RECORD. The Supplement contains the colored samples, dyed according to recipes given. The selection of samples is carefully made, and it is the aim to show shades which are of especial interest to the dyer, and which the requirements of the market demand. The Dyers' Supplement is a 16-page pamphlet, in convenient form for preservation. Subscription price for the Dyers' Supplement $1.00 per year.

Recipe No. 1

YELLOW ON WORSTED YARN

Fast Wool Yellow 2 G on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Fast Wool Yellow 2 G.
(Kalle & Co., 530 Canal St., New York, N. Y.)
1 lb. Sulphuric Acid.
10 lbs. Glauber's Salt.

Wet the yarn out and enter at 105° to 125° F., bring slowly (in about 30 minutes) to the boil. Boil 45 minutes and add

1 lb. Sulphuric Acid,

and boil another 30 minutes.

Fast Wool Yellow 2 G possesses exceptional fastness to light.

Recipe No. 2

BLUE ON WORSTED YARN

Anthrazurine G S on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Anthrazurine G S.
(Kalle & Co., 530 Canal St., New York, N. Y.)
10 lbs. Glauber's Salt.
1 lb. Sulphuric Acid.

Wet out yarn and enter at 105° to 125° F., bring slowly (in about 30 minutes), to a boil, boil 45 minutes and add

1 lb. Sulphuric Acid.

and boil another 30 minutes.

Anthrazurine G S is an exceptionally good color for use in dyeing worsted or woolen cloth containing a white silk effect thread. When dyed at a boil in a bath strongly acidified with acetic acid (2c lbs. to 100 lbs. of goods) silk will remain unstained. Its fastness to light is excellent.

Recipe No. 3

BROWN ON COTTON YARN

Diamine Aldehyde Brown R on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Diamine Aldehyde Brown R.
(Cassella Color Co., 182 Front St., New York, N. Y.)
40 lbs. Glauber's Salt (Crystal).

Dye at a boil for one hour and aftertreat in a bath made up with

3 lbs. Formaldehyde.
½ lb. Potassium Bichromate.
1 lb. Acetic Acid.

Diamine Aldehyde Brown R possesses good fastness to washing.

Recipe No. 4

SCARLET ON COTTON YARN

Azidine Fast Scarlet E 4 B S on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Azidine Fast Scarlet E 4 B S.
(C. Bischoff & Co., 451 Washington St., New York, N. Y.)
25 lbs. Common Salt.

Enter at 180° F. and dye at boil one hour.

Azidine Fast Scarlet E 4 B S gives a brilliant red of very good fastness

Recipe No. 5

BROWN ON COTTON YARN

Diamine Aldehyde Brown V S on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Diamine Aldehyde Brown V S.
(Cassella Color Co., 182 Front St., New York, N. Y.)
40 lbs. Glauber's Salt Crystals.

Dye at a boil for one hour, then aftertreat in a bath made up with

3 lbs. Formaldehyde.
½ lb. Potassium Bichromate.
1 lb. Acetic Acid.

Diamine Aldehyde Brown V S possesses good fastness to washing.

Recipe No. 6

GREEN ON COTTON YARN

Triazol Green 2 G on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Triazol Green 2 G.
(Geisenheimer & Co., 189 Front St., New York, N. Y.)
20 lbs. Glauber's Salt.

Enter at 180° F. and dye at boil one hour.

Triazol Green 2 G possesses good fastness for a direct cotton color.

Recipe No. 7

BROWN ON WORSTED YARN

X L Brown R H on 100 lbs. yarn. Prepare the dye bath with

2 lbs. X L Brown R H.
(Read Holliday & Sons, 11 Gold St., New York, N. Y.)
2 lbs. Sulphuric Acid.
10 lbs. Glauber's Salt.

Dye in the usual manner.

Recipe No. 8

BLUE ON COTTON YARN

Tannin Discharge Blue R B X on 100 lbs. cotton yarn. First mordant the yarn with tannin by working for 1/2 hour at a boiling temperature in a bath made up with

5 lbs. Tannic Acid (or its equivalent in Tannin Extract),

and allowing it to steep over night in the gradually cooling bath.

Wring and without washing work for 1/2 hour in a cold bath made up with

1½ lbs. Tartar Emetic,

and then wash.

The yarn is then dyed in a bath made up with

1½ lbs. Tannin Discharge Blue R B X.
(Badische Co., 86 Federal St., Boston, Mass.)
¼ lb. Acetic Acid.

Entering at 100° F., bring the temperature to 140° to 160° F., and working at this temperature for one hour.

Tannin Discharge Blue R B X will be found an excellent ground color for discharge work and calico printing.

Recipe No. 9

RED ON COTTON YARN

Zambesi Red 4 B on 100 lbs. cotton yarn. Prepare the dye bath with

4 lbs. Zambesi Red 4 B.
(Berlin Aniline Works, 213 Water St., New York, N. Y.)
20 lbs. Glauber's Salt.
1 lb. Soda Ash.

Dye at a boil for one hour, being careful that the bath does not cool down during the dyeing process. Rinse and then diazotize and develop with beta naphthol by working 1/2 hour in a cold bath made with

4 lbs. Nitrite of Soda,
8 lbs. Sulphuric Acid (168° Tw.),

then wring or squeeze, rinse and work for 1/2 hour in a cold bath made with

1 lb. Beta Naphthol,
1 lb. Caustic Soda (76° Tw.),

and then wash.

Zambesi Red 4 B when dyed and developed as indicated above, possesses good fastness to washing, and its fastness in most other respects is good, being faster to light than primuline.

Recipe No. 10

RED ON COTTON YARN

Fast Scarlet R H on 100 lbs. yarn. Prepare the dye bath with

2 lbs. Chlor. Fast Scarlet R H.
(Read Holliday & Sons, 11 Gold St., New York, N. Y.)
20 lbs. Salt.

Prepare the dye bath in the usual manner.

Recipe No. 11

YELLOW ON COTTON YARN

Benzoform Yellow R on 100 lbs. cotton yarn. Prepare the dye bath with

2 lbs. Benzoform Yellow R.
(Bayer Co., 117 Hudson St., New York, N. Y.)
20 lbs. Common Salt.

Dye at a boil for one hour and then aftertreat for 1/2 hour at 140° F. in a fresh bath made up with

2 lbs. Formaldehyde.

Benzoform Yellow R when thus after treated possesses good fastness to light and alkali.

Recipe No. 12

BLUE ON WORSTED YARN

Alizarine Direct Blue E S R on 100 lbs. worsted yarn. Prepare the dye bath with

2 lbs. Alizarine Direct Blue E S R.
(Farbuerr Hoechst, 122 Hudson St., New York, N. Y.)
10 lbs. Glauber's Salt.
4 lbs. Sulphuric Acid.

Enter at 140° F. and dye at a boil for one hour.

Alizarine Direct Blue E S R possesses excellent fastness to light. Its fastness to washing and milling is increased by after chroming but the shade becomes greener and duller.

New Machinery and Processes

This department is designed to present from month to month a brief mention of new machinery, devices and processes being brought out in this country and abroad, that are of interest to the textile manufacturers. It is not a list of patents but of improvements on the market, the idea being to present to our readers a systematic monthly record of new machinery, etc., of interest to textile mill men.

Whenever possible we endeavor to make a personal investigation of the new machinery and processes described in this department. In the absence of such personal investigation we must necessarily rely upon information obtained from those who control the machines and processes.

We invite machine builders and others to send us such information for this department.

Jacquard Motion. A. Flather & Sons, Bradford, England. An improved lifting motion for jacquard looms which is worked from the top shaft of the loom to avoid jarring.

Humidifying Apparatus. J. A. Hart, Blackburn, England. An improved air cooling humidifying and washing apparatus.

Stop Motion for Twisters. Sharkie & Huntbatch, Manchester, Eng. A new device for stopping the top rollers of twisting frames when a thread breaks. It is said to be simple in construction and very efficient.

Yarn Dyeing Machine. C. McFarlane, Heywood, England. A machine for dyeing yarn in the hank which is said to reduce the cost of labor and the danger of uneven shades.

Slub Preventor for Fly Frames. Robert Belshaw, Farnworth, Bolton, England. An attachment for fly frames to prevent slubs. It is claimed that by means of this device all slubs are eliminated before the sliver reaches the spinning frame.

Tension for Mule Bands. The Societe anonyme vervietoise pour la construction de machines, Verviers, Belgium. A device for maintaining the tension of the scroll bands on mules.

Woolen Ring Frame. Fernando Casablancas, Sabadell, Spain. An improved device for spinning woolen yarn on a ring frame, the draft being obtained after imparting false twist to the roving.

Spindle for Yarn Dyeing Machine. P. G. Vollert, Reichenberg, Bohemia. An improved spindle for yarn dyed in automatic dyeing machines.

Differential Motion for Winders. G. F. Grosser, Markersdorf, near Leipzig, Germany. An improved differential motion for driving the spindles of filling winders.

Picking Motion for Looms. Edward Smith & Son, Garnet St., Bradford, Eng. A device for reducing the wear of loom pickers. It is stated that the average life of a picker is about nine months when used in connection with the Smith attachment, which will, it is said, pay for itself in six months.

Warp Tension for Looms. Hartley & Riley, Bury, England. An improved device for regulating the tension of warps in the loom.

Silk Dyeing Machine. The Royle Dyeing Co., Macclesfield, England. A machine for dyeing, bleaching and washing artificial silk. As is well known, this material loses much of its strength when wet. This machine is designed to handle the skeins without breaking.

Drying Yarn on Spools. Franz Franken, Tilburg, Holland. A machine for drying yarn on spools after dyeing or bleaching. Hot air is forced from the interior of the spool through the yarn.

Yarn Moistening Machine. B. H. Cohnen, Grevenbroich, near Cologne, Germany. An apparatus for moistening yarn to set the twist preparatory to weaving. It consists of a rotary pump, a blower, drip curtains and trucks in which the perforated baskets filled with yarn are placed, the whole apparatus being enclosed in a closed room in which the temperature and humidity can be regulated as desired.

THE BROWN GEARED-SPINDLE BAND

The Brown steel band drive for ring frame spindles was described by us nearly four years ago. Since that time the Brown Spin-Wright Co., 32 Union Sq., New York, have been engaged in subjecting this drive to every possible test, so that no doubt might remain as to its efficiency and durability when the time came to put it in the mill. The drive has withstood these tests to their satisfaction. We recently inspected it in operation in a cotton mill at New Bedford, Mass., where a frame equipped with the Brown drive was running at a spindle speed of 8500 revolutions per minute.

FIG. 1 THE BROWN GEARED SPINDLE BAND

As those who read our early description of this drive know, it consists of a steel band about an inch and a half wide running over gears on the spindles, the perforations in the band locking into the herringbone gears on the spindle, as shown in the illustration, Fig. 1. The band is driven at one end of the frame by a special gear to fit the perforations, and runs over idler pulleys at the other end, thus giving an absolutely positive drive for every spindle. With the Brown drive, a spindle can no more slip than if it was geared directly to the driving shaft of the frame.

It is hardly necessary to dwell upon the great advantages of such a drive, which eliminates all the troubles now resulting from slack and tight cotton bands. The use of the Brown drive puts exactly the same number of turns of twist in every inch of yarn delivered to every spindle on the frame. Under the present variable speed conditions the production is reduced by the fact that part of the spindles may be running at a lower speed than the others. As a result of the Brown positive drive, all the spindles can be operated at a maximum speed, thus giving an increased production of yarn.

Another important advantage is the freedom from flyings, which now accumulate around the spindles and rails and are caught up by the yarn, causing slugs and bunches, which lessen materially the value of the product. The Brown spindle drive is tightly inclosed, and can be easily cleaned as shown in Fig. 2, as there are no projecting oil cups to catch the flyings. The contrast in this respect between the Brown and the ordinary drive, is shown by a comparison of Figs. 2 and 3, the latter showing the flyings that accumulate around the oil cups on a frame with the cotton band drive under working conditions. Much of these flyings comes from the bands, shown with the tin cylinder in Fig. 3, but which have been eliminated by the Brown drive, leaving free the entire central portion of the frame, as shown clearly in Fig. 2. Any flyings that may settle on the frame inclosing the Brown band are easily and completely removed by the operator passing a piece of waste from one end of the frame to the other. The result is that the yarn spun with the Brown drive is free from imperfections caused by flyings. This, in connection with the absolute uniformity of twist, gives a more valuable product, a fact that cannot fail to prove important to spinners who are brought into sharp

competition with either foreign or domestic yarns of various grades.

Another valuable feature of the Brown drive is that it automatically oils itself and every spindle on the frame. The idler pulleys, over which the band passes at one end of the frame, run in oil. In this way the band carries the oil to the gears on each spindle,

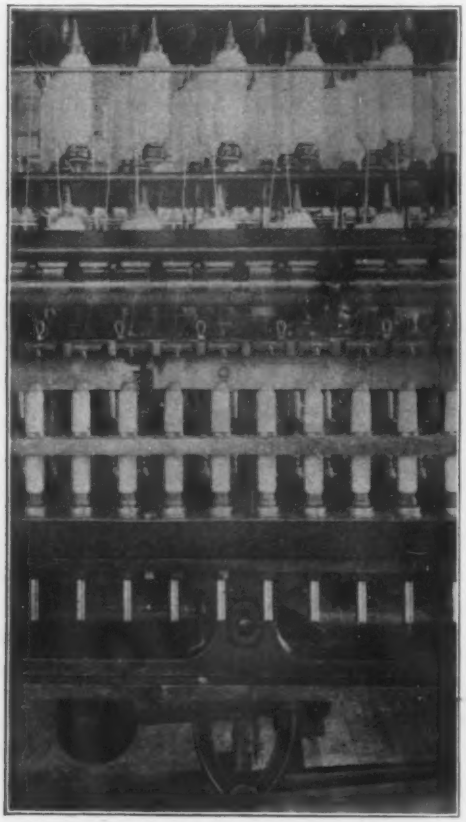


FIG. 2. PORTION OF A RING SPINNING FRAME SHOWING THE BROWN GEARED SPINDLE DRIVE CASED IN

and the surplus oil runs down through an oil hole into the spindle bearing, keeping every spindle well oiled at all times. The oiling device is so arranged that no oil can escape and get on the yarn or floor.

As all running parts of the Brown drive are inclosed, there is no possibility of injury to the operative. This advantage is made plain by a comparison of Figs. 2 and 3, showing the Brown and the ordinary drive.

The spindle can be readily stopped, which permits of tying up the ends.

The spindle can be easily disconnected and removed without interfering with the running of the other spindles of the frame.

With the ordinary cotton band the strain resulting from the necessary tension on the band comes directly on the spindle increasing the friction on the bearings, and causing a serious loss of power. The slight strain

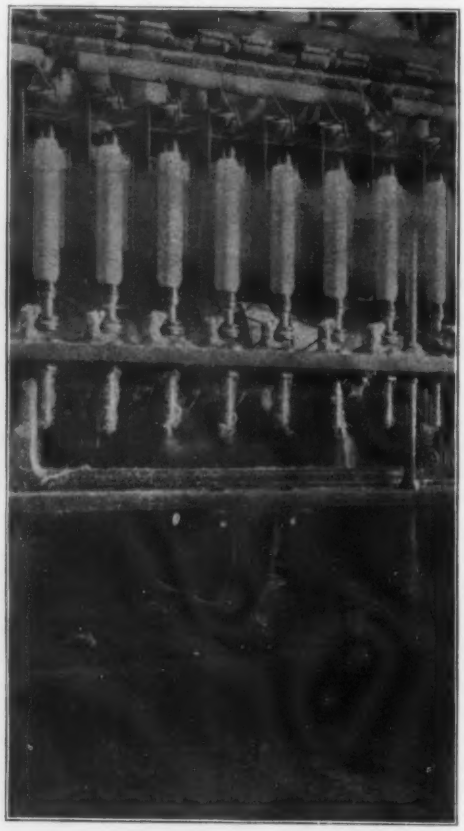


FIG. 3. PORTION OF A RING SPINNING FRAME EQUIPPED WITH THE ORDINARY COTTON BAND AND TIN CYLINDER DRIVE

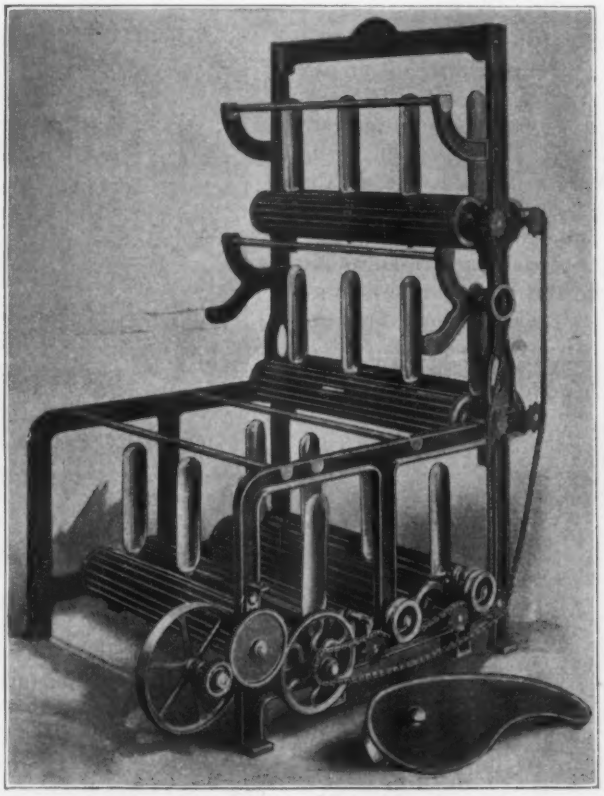
resulting from the tension on the Brown drive comes, not on the spindles, but on the driving and carrying pulleys at each end of the frame. This results in prolonging the life of the spindle and reducing the power required for driving the frame.

The Brown spindle drive has been protected by patents in all the principal manufacturing countries. The builders will be pleased to show it in operation to interested manufacturers.

A NEW REVOLVING BALL CREEL FOR WORSTED MILLS

A machine combining simplicity with a wide range of utility in the feeding of card balls and tops to gill boxes and other machines has recently been placed on the market by Speed & Stephenson, 170 Summer St., Boston, Mass. As will be seen from the illustration this machine is of a substantial design throughout. The frame work is of strong construction with girths all machined to template to ensure rigidity. The rolls instead of being made from corrugated sheet metals, are built in skeleton form with round steel rods supported at each end and in the center by cast iron plates drilled to template and secured to the shafts by set screws. In this way the rolls always keep to their original sizes, thus assuring each and every ball to rotate at a uniform surface speed.

The separators are fitted in the girths with adjustments, are of suitable height and width and enameled with porcelain to ensure an even, smooth surface impervious to moisture. The rolls are driven in the usual way by special block chain with double stud gears. The gearing part is provided with the necessary gear guard swiveling on a stud for easy access. The production is increased, the quality of the work improved, and the amount of waste reduced, these results being due to the perfect feed obtained by the new style rolls.



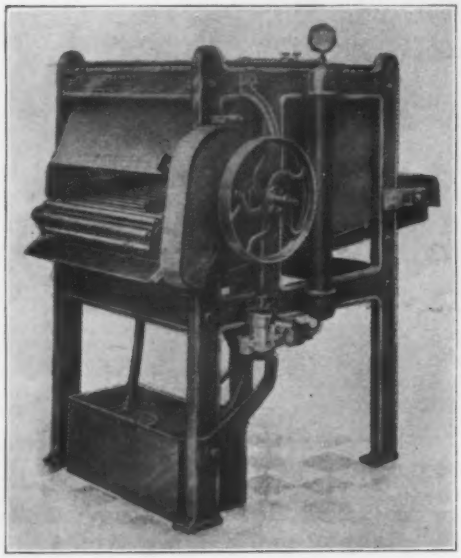
A NEW REVOLVING BALL CREEL FOR WORSTED MILLS

The patent skeleton steel rolls can be easily applied to existing machines, the initial cost being very little more than the cost of recovering rolls with corrugated sheet metal.

The exports of cotton from Brazil in 1912 amounted to 16,774 tons, representing a value of $5,186,000.

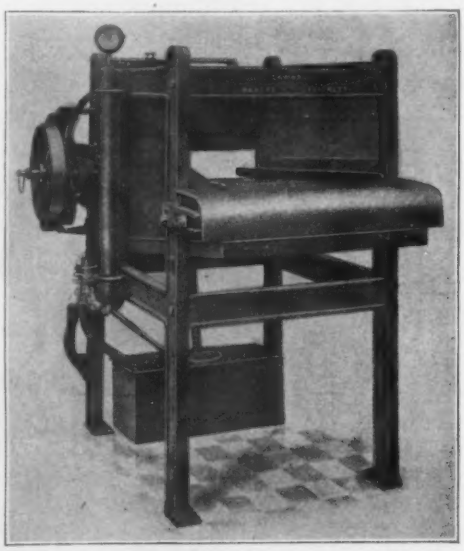
WRAY'S WORSTED YARN CONDITIONING MACHINE

The importance of regulating the moisture in textile materials and particularly in wool, has been made very clear during recent months by our investigations of the effect of the weather on the weight of worsted and cotton yarn. In October we gave a comparative statement of the actual regain of worsted at Boston and Bradford for each month of the year 1912. At Boston the average monthly regain varied from 15.6 per cent. in June to 23.7 per cent. in January Wide as is this variation it does not indicate the actual variation in the weight of textile material in process of manufacture as the figures were based on outside atmospheric conditions. The moisture in wool or other material in process of manufacture is rapidly evaporated during the winter months because of the heat inside the mill and the



OUTSIDE VIEW OF THE WRAY CONDITIONING MACHINE

very small quantity of moisture in the air. Wool under normal conditions should carry about 18 1/4 per cent. of moisture based on the dry weight of the material. During the winter in the New England and Middle States it is a common occurrence for the amount of moisture in the outside the mill air to be so small that when the air in the work rooms is heated to 70° the relative humidity will drop as low as 4 or 5 per cent. Under such conditions wool instead of carrying 18 1/4 per cent. of moisture will carry about 5 per cent. This represents an important loss to the spinner unless he takes measures to restore the material to its normal condition of moisture before weighing and invoicing it.



INSIDE VIEW OF THE WRAY CONDITIONING MACHINE

Various methods have been adopted for restoring the moisture lost during the process of manufacturing, one of the best being the use of the Wray automatic worsted yarn setting and conditioning machine, which is shown in the accompanying illustration, and for which Edward Jefferson & Bro., 117-123 South Second St., Philadelphia, Pa., are the American agents.

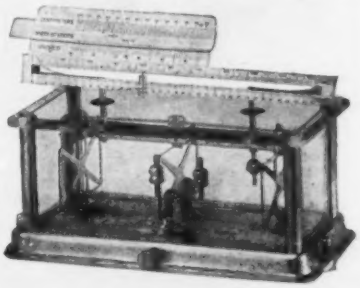
The material to be conditioned is placed on a traveling apron which passes under a humidifier. By means of an automatic device the moisture is applied to both sides of the bobbins which then pass from the machine into the receptacle provided for them. The Wray machine can be adjusted to give any percentage of humidity desired by running the front rollers faster or slower. It is continuous in action, only one boy being required to operate it.

The advantages of this machine are summarized as follows: Uniform conditioning, large production, ease of regulation, small floor space required, economy of labor and convenience of operation.

Further particulars can be obtained on application to the American agents.

COMPUTING SCALES FOR TEXTILES

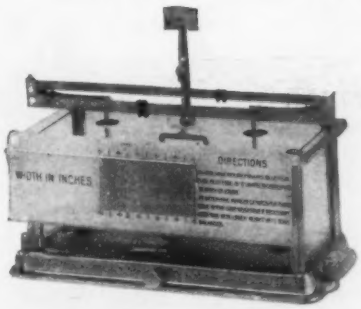
The Torsion Balance Co., 92 Reade St., New York, have recently placed on the market two computing textile scales. These are rapidly finding favor not only with the mills but also among commission men. Style 5,000 determines the weight of cloth per yard in ounces and grams regardless of



STYLE 5,000, A COMPUTING SCALE FOR TEXTILES

width. This scale is of value to purchasers of woolen goods in determining the weight of the fabric and serves as a rapid check against specifications. The mills find it valuable to determine quickly the weight and uniformity of their products as manufactured. The ordinary practice is to weigh a square yard or running yard of the goods. This takes much time and results in a large loss of goods. A sample 2 inches square can be taken from different parts of the piece and a better range obtained than is possible under the old method. If a manufacturer receives only a small sample to duplicate as it is often the case, this scale is especially valuable. If the width or weight of cloth falls beyond the range of the scale, multiples of the area can be substituted with the corresponding corrections of the reading.

Style 5,005 determines the number of yards of cloth per pound regardless of width. This scale is of value to manufacturers of cotton goods when the number of yards per pound is desired. This method can supplant in most instances the weighing of a yard with the resulting loss of time and goods.



STYLE 5,005, A COMPUTING SCALE FOR TEXTILES

It is also of great value as a check against specifications. If the range of the scale is not within the weight and dimensions of a fabric, multiples of the area can be used with the necessary corrections for the final result.

THE NEW HESS-BRIGHT BALL BEARING HANGER

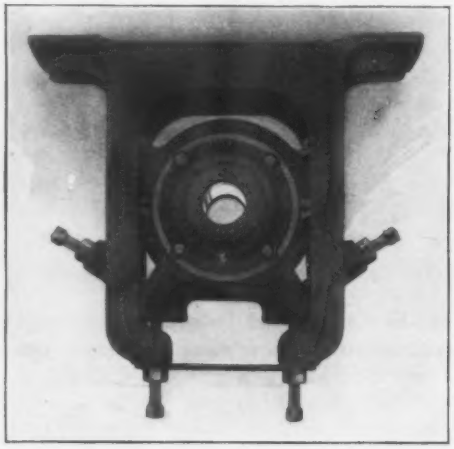
The Hess-Bright Manufacturing Company of Philadelphia, makers of the famous Hess-Bright Ball Bearings, have for a long time been endeavoring to secure a hanger free from objectionable features, and now believe that Mr. Bright has at last succeeded in designing one which attains their ideal.

Some years ago this Company furnished with its ball bearings a universal hanger with a four-point suspension for holding the ball bearing box in position, and although this gave satisfactory results on a comparative basis, it was nevertheless open to the objection that the box could not swivel for it became practically a part of the frame as soon as the four screws were tightened against it.

To overcome this trouble the Company designed a hanger of its own in which a universal swivel was provided, the bearing box being secured by only two set screws, these being horizontal and pressing against the sides. This reduced the probabilities of

distortion of the box body about 50 per cent. but there was still the possibility of careless or ignorant workmen putting too much pressure on these two set screws, consequently pinching the balls and creating unnecessary friction and consumption of power.

Bright's New Hess-Bright Ball Bearing



BRIGHT'S NEW HESS-BRIGHT BALL BEARING HANGER

Hanger has none of these objections. By referring to the illustration it will be seen that the necessary feature, a universal swivel, is provided for by having a spherical box held in a spherical seated yoke. The gives the box a positively universal swivel, allowing it to take its proper position on the shaft at all times regardless of the weight or pull on the shaft at any point between hangers. It will be noted also that the design eliminates the set screw supports, yet it is more rigid than any other hanger previously put out by this Company, and is free from troublesome features.

Although there are four set screws to hold the box and yoke, it is not possible to distort the ball bearing box by pressure on these set screws—they hold the ball bearing arrangement in position but cannot pinch it in any way.

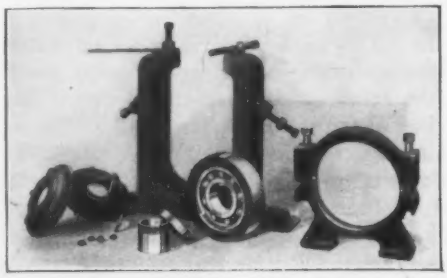
In order to give a universal swivelling bearing by ordinary means, the ball track in the outer race of the bearing must be struck from the center of the shaft but this gives a practically flat race and so reduces the carrying capacity of the bearing. The new universal swivel box, however, provides for this without any loss in carrying capacity.

This design gives an exceptional flexible

THE HESS-BRIGHT HANGER SHOWING THE UNIVERSAL SWIVEL

hanger that it is practically impossible to impair through carelessness on the part of unskilled workmen.

Although apparently looking heavy, its



THE YOKE AND BOX ON THE HESS-BRIGHT HANGERS

hollow box section construction prevents it from being any heavier than other hangers of equal bearing capacity.

The latest reports from Belgium give the cotton spindleage as being 1,400,000. Of this number Ghent possesses 900,000 spinning spindles and 150,000 doubling spindles, the firms engaged in cotton spinning numbering 28.

A COMPLETE LINE OF POP SAFETY VALVES

A complete line of pop safety valves is manufactured by the Lunkenheimer Co., probably the largest manufacturers of high grade engineering specialties in the world, having their executive offices and factories

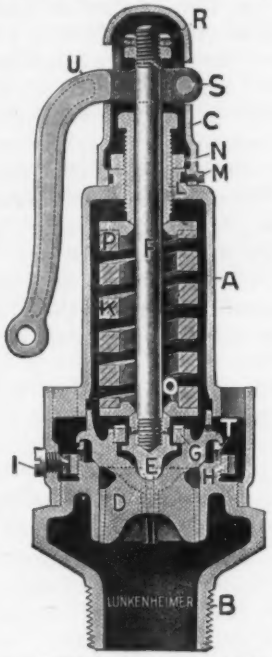


FIG. 1. "SENTINEL" BRONZE TOP OUTLET POP SAFETY VALVE

in Cincinnati, O. The Lunkenheimer "Sentinel" pop safety valve is made either entirely of bronze (Fig. 1), or with iron body and bronze mounted (Fig. 3), and as the working parts are identical, a description of one will suffice for both. Reference is therefore had to Fig. 1, which illustrates the bronze construction.

When a pop valve is ordered, the purchaser, as a rule, stipulates the pressure at which he desires the valve to relieve, but after the valve is connected, certain conditions may arise that require a resetting of the valve. With the Lunkenheimer construction, it is not necessary that the entire valve be taken apart for this purpose, it being only necessary to remove the lever, U, then the bonnet, C, when access can be had to the regulating screw, L. Should it be desired to have the valve relieve at a higher pressure than that for which it was set, the regulating screw, L, is turned down, placing a greater load on the spring, and for a lower

FIG. 2 "SENTINEL" BRONZE SIDE OUTLET POP SAFETY VALVE

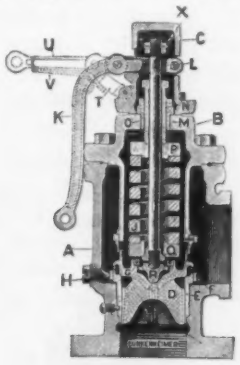


FIG. 3 "SENTINEL" IRON BODY BRONZE MOUNTED POP SAFETY VALVE

pressure, it is turned up, which relieves the load.

It is usually found that after a valve has been reset, it will either relieve too much or not enough pressure. This is rectified in the Lunkenheimer improved construction, by a

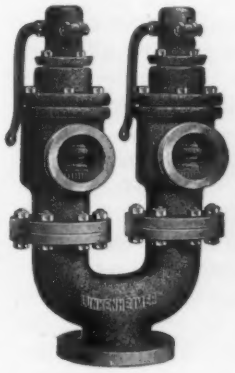


FIG. 4 "TWIN" POP SAFETY VALVES

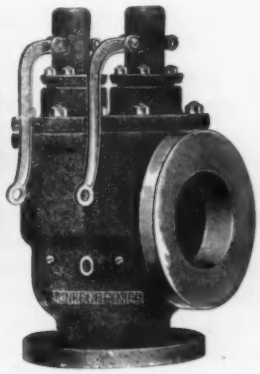


FIG. 5 "DUPLEX" POP SAFETY VALVES

regulating ring, H, located in the base of the valve, and which screws over an extension of the seat. The object of this ring is to cover or uncover, as the case may require, a series of holes, T, drilled around the extension of the seat, and by removing the set screw, I, and inserting a wire, the regulating

ring, H, can be turned up or down, as desired. By turning the ring, H, up, covering the holes, only a small quantity of steam can escape through these holes, which places a large amount of pressure on the bottom of the disc flange or lip, giving it a higher lift and holding it longer off its seat, thereby allowing considerable steam to escape and a proportionate amount of pressure. Turning

FIG. 6
"MARINE" PATTERN POP SAFETY VALVE

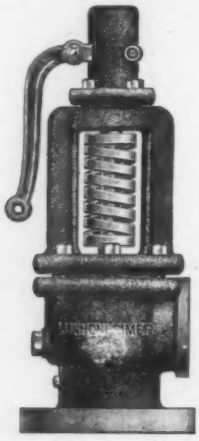


FIG. 7
POP SAFETY VALVE WITH SPRING EXPOSED

the ring, H, down uncovers the holes, allowing the free escape of steam through them, but inasmuch as the pressure on the bottom of the disc flange is decreased, the disc will not raise very far off its seat, closes quicker, permits but a small amount of steam to escape, and therefore, a small reduction in pressure.

This improved construction enables a very wide range in reduction of pressure,—from as low as one pound to as high as fifteen pounds, depending, of course, on the pressure carried in the boiler. It will be noticed, by reference to Fig. 1, that an extension on the top of the disc, G, fits within the bottom of the bell, A. The object of this is to thoroughly encase the spring, K, thereby protecting it from the corrosive action of the steam.

The valve shown in Fig. 1 is of the top outlet pattern, but where it is desired to have the escaping steam exhaust at a distance from the valve, the angle pattern, shown at Fig. 2, should be used, which permits of the connection of a pipe at the side.

The use of large size pop valves is in a number of cases not only objectionable, but in some States a pop valve above five inches is prohibited. It is therefore necessary to use two smaller valves having a combined area equal to that of the required large size valve, and for this reason the construction shown in Figs. 4 and 5 were designed.

Fig. 4 illustrates the "Twin" pop valve, which merely consists of two separate valves attached to a suitable base or Y, while Fig. 5 shows the "Duplex," in which two independently operating valves are encased in one body. Both have their advantages. With the "Twin," should one of the valves become damaged beyond repair, it can be replaced with a new valve at a less cost than the "Duplex." On the other hand, space may not permit of the use of the "Twin," and consequently the "Duplex" must be resorted to.

Fig. 6 illustrates a type of valve generally known as the "Marine" pattern. It differs from the "Sentinel" pop valve, shown in Fig. 3, only in the addition of a wing handle at the top of the valve, the object of which is to conveniently enable the turning of the disc on its seat for regrinding purposes, or while the valve is under pressure, to remove slight incrustations that may lodge on the seating surfaces.

An improved form of valve that is very popular is that shown in Fig. 7. In this construction, the spring is exposed, the principal advantages being that spring is positively protected from the steam and that it is at all times accessible for inspection.

The Lunkenheimer Company also claim that their valves will positively and promptly relieve when the pressures in the boilers exceeds that for which the valves are set. They can be regulated without taking them apart and have full relieving capacity, insuring a free and unobstructed discharge of steam. The company maintains a rigid system of testing and inspecting, which enables them to broadly guarantee their products to be exactly as represented.

The Lunkenheimer Company have issued a booklet, illustrating and describing in detail their complete line of pop safety and relief valves.

"DANYSZ VIRUS"

A SCIENTIFIC METHOD OF GETTING RID OF RATS AND MICE

In 1900 Dr. Danysz, in his capacity as director of the laboratory of Agricultural micro-biology of the Pasteur Institute, Paris, had his attention directed to an outbreak of a disease amongst field mice. He investigated the epidemic and after prolonged search succeeded in isolating the germs of the disease. The history of his work to produce a virulent culture that could be used in the war against the rodents would fill volumes. Finally, after long and painstaking procedures, Dr. Danysz obtained a very virulent culture that preserved its virulence for several months.

The great problem of preparing the Virus so that it would be within the reach of everybody next had Dr. Danysz's attention.

Dr. Danysz found that the germs would live on a form of specially prepared gelatine and could be kept alive and virulent in test tubes such as scientists use if a certain amount of airspace was left in the tube; next the question of preparing the tubes for transportation was considered. A uniform temperature was desired and tubes must not be exposed to the light. The tubes were sealed and wrapped in paper, packed in cardboard boxes with asbestos in lots of one, three, six and twelve tubes and these boxes packed with asbestos in cases containing two hundred and fifty tubes each. In this way Dansyz Virus is now transported to all corners of the earth and the germs kept alive and virulent from two to three months.

After the remarkable success in Russia, England, France, Germany and Holland began the use of the Danysz Virus on a large scale. In France and Holland, Danysz Virus is distributed by the government.

The Danysz Virus, Ltd., was formed in London and the distribution of the Danysz Virus was carried on in England and Germany as well as other countries of the world outside of France and Holland.

In England, whole villages and towns have waged a war on rats and mice with the Danysz Virus.

One thousand tubes of Virus were used on three of the London Subways with remarkable success. A few days after the application rats began to rush to the surface. Each morning when the stations were opened, the dead rats were found. Outside of one station four rats were found dead around a roadside puddle.

In addition to the cases quoted Danysz Virus has been used on the Royal Estate, Sandringham, on other properties, on farms, game preserves, etc.; in private houses, stables, kennels, poultry pens, flour mills, breweries and dock yards; in fact, wherever rats have been found troublesome or destructive.

On the Government farms in Trinidad and elsewhere in the West Indies, in South Africa, Australia, and on islands of the Indian and Pacific Oceans, it has been found of the greatest value.

It was not until January, 1909, that the real Danysz Virus received its introduction to the public of the United States through Mr. Benjamin Russell, United States Superintendent of Warehouses for the port of New York. Mr. Russell had heard of the wonderful results accomplished abroad and decided to test the Virus.

In 1909, Mr. Russell had the contents of 120 tubes of the Danysz Virus prepared and distributed through a large warehouse at Beard's Stores, Erie Basin. Ten days later, January 28, 1909, Mr. Russell announced to the press of the United States that the experiment was a complete success.

The success of the Danysz Virus in the United States can best be told by some of the users.

Following are typical reports received from warehouses, mills, factories, stores, private estates, etc., throughout the United States:

L. C. Teller, of Teller's Broadway Theatre, Brooklyn, N. Y.: "It is a modern miracle."

F. X. Baumert & Co., cheese mfrs.: "It is the most effective thing for rat extermination that we have ever seen."

The New Orleans Cold Storage & Warehouses, Ltd., New Orleans, La.: "Danysz Virus is most effective."

At Campbell Stores, Hoboken, N. J., one thousand tubes of Danysz Virus were used with remarkable results.

The Clothing House of A. Raymond, New York, report "Excellent results."

Many textile mills in Fall River, Mass., are using Danysz Virus with most satisfactory results.

Personals

George E. Spofford, agent of the Newmarket Manufacturing Co., Newmarket, N. H., has tendered his resignation to accept the position of general manager of the Langley Manufacturing Co., Langley, S. C., Aiken Manufacturing Co., Bath, S. C., and the Seminole Manufacturing Co., Clearwater, S. C. He will enter upon his new duties about January 1. For a number of years Mr. Spofford was agent of the Blackstone Manufacturing Co., Blackstone, Mass., before accepting the position with the Newmarket Manufacturing Co.

Asa Silverwood, designer at the Shelbourne Mill, Philadelphia, Pa., has resigned to accept the position of designer and overseer of weaving at the Bound Brook Woolen Mills, Bound Brook, N. J.

Albert E. Riley, who was formerly in charge of dyeing at the Rockville Worsted Co., Rockville, Conn., who resigned his position recently, has sailed for his home in Europe where he intends to spend some time. Mr. Riley is an exceptionally good dyer and no doubt on his return to America he will soon secure a position with one of our large mills.

Robert J. Shutt has accepted the position of second hand of dyeing at the Lawrence Dye Works, Lawrence, Mass.

D. S. Knight, superintendent for C. J. Amidon & Son's Mill at Wilton, N. H., who accepted a position there a short time ago, is no longer in their employ.

Charles A. Corbett has accepted the position of overseer of carding at the Madison Woolen Co., Madison, Me. He was formerly employed at the Cocheco Woolen Manufacturing Co., East Rochester, N. H.

Nehemiah Jordan, master mechanic at the Royal Mill, B. B. & R. Knight, River Point, R. I., has severed his connection with that company. He is succeeded by John Bellamy, who comes from the Nottingham Mill, Providence, R. I.

F. L. Davis has been appointed superintendent of the C. J. Amidon & Son's Mill, Wilton, N. H. He formerly held this position.

Cyrus E. Smith has accepted the positon of overseer of carding at the Laurel Lake Mill, Fall River, Mass. He comes from the Fall River Iron Works Co., of the same city.

Henry Stott, overseer of carding at the John K. Stewart & Sons Mill, Amsterdam, N. Y., has resigned to accept the position of superintendent of the yarn mill recently taken over by Blood & Barnes of Amsterdam, N. Y. This mill was formerly known as the Blood Knitting Co.

Felix Bassett, overseer of carding at the Laurel Lake Mill, Fall River, Mass., has resigned to accept a similar position with the Pilgrim Mill of the same city.

Charles Young, for a number of years overseer of carding at the Royal Mill, B. B. & R. Knight Co., River Point, R. I., has severed his connection with that company to accept a similar position with the Merchants' Manufacturing Co., Fall River, Mass.

Frank Tifft has been appointed overseer of carding at the Valley Queen Mill, B. B. & R. Knight, River Point, R. I. He was formerly second hand at the Centreville Cotton Mill, Centreville, R. I.

John E. Tobin, overseer of weaving at the China Mill, Suncook, N. H., has resigned to accept a similar position with the Edwards Manufacturing Co., Augusta, Me.

Michael Conlin, overseer of carding at the Valley Queen Mill, B. B. & R. Knight, Riverpoint, R. I., has resigned to accept a similar position with the Royal Mill at the same place.

Fred Hollingsworth has accepted the position of overseer of dyeing in the yarn department at the Lawrence Dye Works Co., Lawrence, Mass. He comes from Norwich, Conn.

Charles Oman, overseer of carding at the Pilgrim Mill, Fall River, Mass., has resigned his position with that company to accept a similar one in New Bedford, Mass.

J. W. Moore, for the past two years overseer of carding and spinning at the Capital City Mill, Columbia, S. C., has resigned as overseer of spinning and has charge of the carding only.

D. L. Clary has been promoted from second hand to overseer of spinning at the Capital City Mill, Columbia, S. C.

Major Davis has accepted the position of overseer of the cloth room at the Bonnie Mill, King's Mountain, N. C. He was formerly employed at the Loray Manufacturing Co., Gastonia, N. C.

R. G. Varnadore has accepted the position of overseer of spinning at the Panola Mill, Greenwood, S. C. He comes from Atlanta, Ga.

E. A. Murray has accepted the position of overseer of finishing at the White Oak Cotton Mills, Greensboro, N. C.

Henry Whitman has accepted the position of overseer of carding at the Panola Mill, Greenwood, S. C. He comes from Clinton, S. C.

W. B. Bridges has accepted the position of overseer of carding at the Thrift Manufacturing Co., Charlotte, N. C.

W. M. Nabors has been promoted to overseer of carding at the Dan River Mills, Schoolfield, Va.

M. L. Taylor has accepted the position of overseer of carding at the Caswell Mills, Kinston, N. C. He was formerly employed at the Fountain Mills, Tarboro, N. C.

Benjamin F. Houston has been appointed superintendent of the Hamer Cotton Mills, Hamer, S. C. He comes from Monroe, N. C.

Irving Ward, who recently accepted the position of superintendent of the worsted yarn department at the Lymansville Co., Lymansville, R. I., has severed his connection with that company.

Robert Sargent, overseer of carding at the Bigelow Carpet Co., Clinton, Mass., has resigned to accept a similar position with the Barre Wool Combing Co., South Barre, Mass.

George F. Geb, superintendent of the Franklin Yarn Co., Franklin, Mass., has severed his connection with that company to start the manufacture of yarn at West Millbury, Mass. He is succeeded at the Franklin Yarn Co. by William Illingworth of Woonsocket, R. I.

William M. Butler, president of the Soule Mill, New Bedford, Mass., has severed his connection with that company.

John Bingham has accepted the position of overseer of finishing at the Lawrence Dye Works Co., Lawrence, Mass. He was formerly employed at the Wood Worsted Mills, Lawrence.

John Cregan has accepted the position of overseer of dyeing at the Intervale Mills, Quinebaug, Conn. He was formerly employed at the Tremont Worsted Co., Methuen, Mass.

F. G. Thomas, agent of the Faulkner Manufacturing Co., North Billerica, Mass., has severed his connection with that company.

Thomas Hederman has accepted the position of overseer of dyeing at the Somersville Woolen Co., Somersville, Conn. He was formerly employed at the Intervale Mills, Quinebaug, Conn.

John P. Lockwood has accepted the position of overseer of weaving at the Orr Felt & Blanket Co., Piqua, O. He was formerly employed at the Ashtabula Worsted Co., Ashtabula, O.

George E. Templeton, overseer of finishing at the Stillwater Worsted Co., Harrisville, R. I., has severed his connection with that company.

Myron Bentley has accepted the position of second hand of the card room at the Bennett Mill of the New England Cotton Yarn Co., New Bedford, Mass. He was formerly employed at the Booth Manufacturing Co., same city.

Thomas Byron has accepted the position of overseer of carding at the Bigelow Carpet Co., Clinton, Mass. He was formerly employed at the Ray Mill, American Woolen Co., Franklin, Mass.

Robert Barlow has accepted the position of overseer of weaving at the Shetucket Co., Norwich, Conn. He was formerly employed at the Uncasville Mfg. Co., Uncasville, Conn.

Thomas Kirkman has accepted the position of overseer of starching and tenter frames at the Farwell Bleachery, Lawrence, Mass. He was formerly employed at the Merrimack Manufacturing Co., Lowell, Mass.

John A. Collins, superintendent of the American Linen Co., Fall River, Mass., has resigned his position with that company, having been employed there for the past twenty-five years. He is succeeded by William J. Colbert, who has been promoted from the position of overseer of weaving.

William B. Garlick, overseer of the machine turning department of the American Printing Co., Fall River, Mass., has resigned his position with that company. He had been in their employ for the past twenty years.

Hamilton Burrage, 78 years of age, who has been employed at the Lowell Bleachery, Lowell, Mass., for over fifty-seven years, has resigned his position as paymaster for this company. He is succeeded by George Ingles.

W. B. Hanson has been appointed general superintendent and consulting engineer at the Lockport Cotton Batting Co., Lockport, N. Y. He was formerly employed at Lewiston, Me.

John W. Jones, overseer of the dressing department at the Cocheco Woolen Manufacturing Co., East Rochester, N. H., has severed his connection with that company.

John W. Robbins has accepted the position of overseer of weaving at the Great Falls Manufacturing Co., Somersworth, N. H. He was formerly employed at the Salmon Falls Manufacturing Co., Salmon Falls, N. H.

Frederick A. McLane, superintendent of the William Skinner & Sons' Silk Mill, Holyoke, Mass., has severed his connection with that company. He has been in their employ for the past twelve years.

J. A. Thompson has accepted the position of overseer of spinning at the Griffin Manufacturing Co., Griffin, Ga. He comes from LaFayette, Ga.

J. F. Cunningham has accepted a position as overseer of spinning at the Fulton Bag & Cotton Mills, Atlanta, Ga.

J. A. McFalls has been appointed superintendent of the A. A. Shuford Mill, Hickory, N. C. He was formerly employed at the Hannah Pickett Mills, Rockingham, N. C.

J. S. Bradbury has been appointed manager of the Demopolis Mills, Demopolis, Ala. He was formerly employed at the Prattville Cotton Mills, Prattville, Ala.

N. C. Richardson has been appointed superintendent of the Social Circle Cotton Mills, Social Circle, Ga. He was formerly employed at the Alice Mill, Easley, S. C., as designer

John S. Lockman has accepted the position of overseer of spinning at the John P. King Manufacturing Co., Augusta, Ga. He comes from Birmingham, Ala.

A. F. Hedgepath has accepted the position of overseer of carding at the Arkwright Mill, Spartanburg, S. C. He comes from Newry, S. C.

J. L. Hoover has accepted the position of overseer of spinning at the Hannah Pickett Mill,

Rockingham, N. C., succeeding J. A. McFalls. He comes from McColl, S. C.

W. L. Phillips has accepted the position of overseer of spinning at the Avondale Mills, Birmingham, Ala. He was formerly employed at the Pomona Mills, Pomona, N. C.

A. M. Cobb has accepted the position of master mechanic at the Thrift Manufacturing Co., Paw Creek, N. C. He was formerly employed at the Wampum Mill, Lincolnton, N. C.

Joseph Costine, overseer of finishing at the Kennebec Mill, American Woolen Co., Fairfield, Me., has severed his connection with that company.

Frank H. Talcott has accepted the position of overseer of finishing at the Kennebec Mills, American Woolen Co., Fairfield, Me. He was formerly employed at the Ray Mill, American Woolen Co., Franklin, Mass.

The Wildman Manufacturing Co., manufacturers of knitting machinery, Norristown, Pa., announce that A. W. Walkden will be added to their selling force at the beginning of 1914.

Albert C. Soar, overseer of the weaving department at the American Textile Co., manufacturers of silk and cotton laces, Pawtucket, R. I., has resigned to accept a similar position with the Richmond Lace Co., Albany, N. Y.

Alexander Seaton, foreman of the bleaching department at the Lonsdale Bleachery, Lonsdale, R. I., has resigned and is succeeded by Richard Thompson.

Edmond Boucher has accepted the position of overseer of spinning at the Fuld & Hatch Knitting Co., Cohoes, N. Y.

Hugh J. Carrigan has accepted the position of designer at the Jenckles Spinning Co., Pawtucket, R. I. He was formerly employed at Fall River, Mass.

Oscar Eckland, overseer of weaving at the J. O. Ballard & Co., Malone Woolen Mills, Malone, N. Y., has severed his connection with that company.

Fred Williams has accepted the position of overseer of dressing at the Cocheco Woolen Manufacturing Co., East Rochester, N. H. He was formerly employed at the Rockville Worsted Co., Rockville, Conn.

James Ransehausen, overseer of finishing at the Harris, Emery Co., Penacook, N. H., has severed his connection with that company to accept a similar position with the H. T. Murdock & Co., Proctorsville, Vt.

J. F. Loomis has been appointed superintendent of the Star Woolen Co., Cohoes, N. Y. He was formerly employed at the Hartford Carpet Corporation, Thompsonville, Conn.

James H. Redmond, superintendent of the Ashtabula Worsted Co., Ashtabula, O., has severed his connection with that company.

Eugene Szepesi has recently completed a contract with the Orr Felt & Blanket Mills, Piqua, O., with whom he has been engaged for over a year past in establishing an efficiency service, which we understand is now in very satisfactory operation. He is making his headquarters at 30 Church St., New York City, with the Emerson Co., and is giving special attention to consultation work for textile manufacturers.

W. H. Morrison has been appointed manager of the Ashtabula Worsted Co., Ashtabula, O.

Charles Sherman has accepted the position of overseer of carding at the John K. Stewart & Sons Mill, Amsterdam, N. Y. He comes from Little Falls, N. Y.

James H. Gannon, overseer of finishing at the H. T. Murdock Co., Proctorsville, Vt., has severed his connection with that company.

Benjamin Maxfield has accepted the position of overseer of carding at H. T. Murdock & Co., Proctorsville, Vt.

Charles Atridge, overseer of dyeing at the Wanskuck Co., Providence, R. I., for the past 15 years, has severed his connection with that company.

Thomas A. Mullaney, for the past four years overseer of carding at the No. 1 Bennett Mill, New Bedford, Mass., has severed his connection with that company. The help in his department presented him with a roll top desk, chair and desk lamp.

C. L. Gilbert, superintendent of the Buffalo Mills, Concord, N. C., has resigned to accept a position with the Turner & Cornwell Co., Gastonia, N. C.

A. O. Norris has accepted the position of overseer of carding at the Cabarrus Mill, Concord, N. C. He was formerly employed at the Hanes Spinning Mill, Winston Salem, N. C.

W. M. Wilson has been appointed superintendent of the Little River Mills, Woodstock, Ga.

E. C. Holt has been elected president of the Holt-Morgan Mills, Fayetteville, N. C., to succeed the late Walter Holt.

Walter Hamilton has accepted the position of overseer of carding at the Johnston Manufacturing Co., Charlotte, N. C. He was formerly employed at the Highland Park Mills, of the same place.

Albert Simpson has accepted the position of bookkeeper at the Aurora Mills, Burlington, N. C. He comes from Greensboro, N. C.

J. D. Patten has accepted the position of overseer of spinning at the Athens Manufacturing Co., Athens, Ga.

A. E. Clayton has accepted the position of overseer of slashing at the Social Circle Cotton Mills, Social Circle, Ga. He was formerly employed at the Walton Mill, Monroe, N. C.

R. E. McDonald has been appointed superintendent of the Anchor Mills, Huntersville, N. C. He was formerly employed at the Brogon Mill, Anderson, S. C.

William Taylor has accepted the position of overseer of finishing at the Harris, Emery Co., Penacook, N. H.

R. L. Barney has accepted the position of overseer of knitting at the Peerless Knitting Mills Co., Mattapan, Mass. He comes from the Superior Underwear Co., Piqua, O.

George W. Ramsay, assistant overseer in the finishing department at the Bigelow Carpet Co., Clinton, Mass., has resigned to accept a position as superintendent of the finishing department for McCleary, Wallin & Crouse, carpet manufacturers, of Amsterdam, N. Y.

Jonathan Cookson, for a number of years overseer of spinning at the Kent Manufacturing Co., Centreville, R. I., died at his home in Centreville, at the age of 65 years.

William Muir has been appointed overseer of dyeing at the Stillwater Worsted Co., Harrisville, R. I., succeeding John Cardow.

Charles Fralick has accepted the position of overseer of carding at the Darling Woolen Mill Co., Holden, Mass., to succeed George H. Snow.

Waldemar Ekstrand has accepted the position of overseer of dyeing at the Milwaukee Worsted Mills, Milwaukee, Wis. He comes from Lawrence, Mass.

DEATHS.

Charles W. Richards, a well known mill man, who had charge of finishing for a number of years at the Blackstone Woolen Co., Blackstone, Mass., and later at Medway, Mass., died at his home in Woonsocket, R. I. He was born in Newton, North Wales, May 6, 1845 and had been a resident of Woonsocket for thirty-five years. Mr. Richards was a prominent Mason, very well known and highly respected. He had not been actively engaged in mill business for a number of years, and is survived by a widow, two daughters and two sons.

Charles S. Smith, general manager and president of the Smith Webbing Co., Pawtucket, R. I., was killed by an automobile, in that city. While avoiding a street car he stepped in front of the automobile. He was 40 years of age and leaves a widow and one child.

Herman Wyss, superintendent of the American Silk Spinning Co., Providence, R. I., died December 14. Mr. Wyss's death resulted from a scratch on the foot received about twelve weeks ago and which developed into blood poisoning. He was born in Switzerland and was formerly superintendent of a mill in Whitehall, N. Y. Mr. Wyss was a Knight Templar and is survived by a widow and four children.

Luther A. Peckham, a retired woolen manufacturer, died at his home in Providence, R. I., at the age of 66 years. At one time he operated the Fulton Worsted Mill of Fulton, N. Y., and was an inventor of card feeds and wool washers. He had retired from active mill life several years ago.

Thomas Hornsby, chief owner of the Thurman Manufacturing Co., Philadelphia, Pa., died after two weeks' illness at the age of 41 years. He is survived by a widow, one son and a daughter.

Philip Purley, for a number of years a manufacturer of gloves at Gloversville, N. Y., died at his home at the age of 77 years. He is survived by a widow.

Isaac C. Johnson, for a number of years an overseer at the Nashua Manufacturing Co., Nashua, N. H., died in that city at the age of 76 years. With his father he was engaged in the manufacture of spinning flyers previous to taking the position as an overseer in the mill.

John Beaton, a retired mill overseer and resident of Haverhill, Mass., for a number of years, died at the home of his son at the age of 74 years. He was born in Glasgow, Scotland and is survived by four sons.

Charles Porter, Sr., head of the firm of Charles Porter & Sons, engaged in the manufacturing of men's wear and prominently connected with financial institutions of Philadelphia, Pa., died December 21 at his home 6141 Wayne Ave., Germantown, Philadelphia, Pa. He was 88 years old. Until two years ago Mr. Porter was president of the Eighth National Bank, but because of ill health resigned. He continued as a director of the institution as well as the Unity Security and Title Trust Company and more than a half dozen other financial institutions. He is survived by his widow, three daughters and a son.

Charles Putnam Searles, Jr., manager of the Globe Mill of the N. E. Cotton Yarn Co., Fall River, Mass., died at his home in Boston, Mass., after a ten days' illness at the age of 25 years. He attended the Noble & Greenough School and then entered the banking business with Kidder, Peabody Co.

Francis H. Silsbee, formerly superintendent of the cotton department of the Pacific Mill, Lawrence, Mass., died at his home in North Andover, Mass., December 18. Death was due to acute indigestion. He was born in Salem, Mass., sixty-one years ago. Was a graduate of the Massachusetts Institute of Technology. At one time he was superintendent of the Saratoga Victory Manufacturing Co., Victory Mills, N. Y., but retired from active business about three years ago. Is survived by a wife and one son.

William E. Sullivan, formerly superintendent of what was known as the Johnson Mill at North Adams, Mass., died at his home in that city at the age of 60 years. Mr. Sullivan was superintendent of the Parkhill Mill at Fitchburg, Mass., after leaving the Johnson Mill.

George Bannister, a manufacturer of fancy knit goods at 82 Armat St., Germantown, Philadelphia, Pa., and one of the most active members of the Odd Fellows of this State, died recently at his home, 111 Maplewood Ave., Germantown. He was a member of the Walker Lodge, No. 306, Perseverance Encampment, I. O. O. F., and Equity Lodge, No. 173, A. O. U. W., of Pennsylvania. His widow and four children survive him.

New Publications

Any work noticed under this heading can be obtained, postage or express charges free, by sending the price listed to Lord & Nagle Company, 144 Congress St., Boston, Mass.

Dyes and Dyeing; by Charles E. Pellew, former assistant professor of chemistry at Columbia University; 264 pages, 5 by 8; McBride, Nast & Co., New York. Price $2.

This volume is intended for the use of craftsmen who are dyeing and staining textiles on a small scale by hand. The author was formerly a teacher in modern dyeing at Columbia University. While on a vacation in Canada he became interested in the textile work of the French habitants along the St. Lawrence, particularly in their methods of dyeing and weaving which has been handed down from mother to daughter from the old Colonial days. Prof. Pellew fitted up a small dye house and started work with his neighbors, giving them instructions in the methods of utilizing modern improvements in the dyeing process. Upon his return home the author wrote for the "Craftsman," of New York, a series of articles upon modern dyeing and dyeing process for the use of craftsmen. These articles form the basis for the present volume, which is an exceedingly useful handbook of this particular branch of dyeing. The contents of the book, which is freely illustrated, are arranged under the following heads: Modern Dyestuffs, The Direct or Salt Colors, Theory and Practice of Color Dyeing, The Sulphur Dyeing, The Indigo or Vat Colors, The Basic Colors, The Acid Colors, Dyeing Feathers, Leather and Leather Dyeing, Silk, Imitation and Artificial Silk, Tied and Dyed Work, Stencils and Stencilling, Resist and Discharge Stencilling, Batik or Wax Resist.

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Defects in Weaving (Defauts Du Tissage); by Adolphe Hullebroeck; 146 pages, 6 by 9; Ch. Beranger, Paris, France. Price $2.50.

The author of this volume gives an account of the processes of preparing yarn for weaving, paying particular attention to the defects and difficulties that arise in winding, warping, sizing and drawing-in. The work contains illustrations showing the machinery and defects in the material in process. The text is in French.

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The Yorkshire Textile Directory; 268 pages, 8 1/2 by 11 1/2; published by John Worrall Limited, Oldham, Eng. Price $2.50.

The 29th edition of this well known directory has been carefully revised to bring it up to date. In addition to the list of the textile manufacturers of Yorkshire, it contains statistics of the number of spindles and looms and a list of the principal firms engaged in the Yorkshire textile trade. The mills are arranged by cities and towns and are classified under each head according to the products. In addition to the name and address of each establishment, there are given the number of spindles and looms, telegraph and telephone address and pay day.

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The Continental Directory of Cotton Spinners and Manufacturers; 350 pages, 8 1/2 by 11 1/2; published by John Worrall Limited, Oldham, Eng. Price $5.

The cotton spinners and manufacturers of Continental Europe are listed in this directory with the establishments arranged by localities. The list includes the name of the firm, address, number of spindles and looms and class of goods. In addition to the regular directory there is a list of the different establishments arranged alphabetically and classified according to trade and countries.

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Calendar for Ribbon Weaving, Braiding and Passementerie (Kalender fuer Bandweberei, Flechterel und Posamentenfabrikation); by O. Both and M. Krissiep; 80 pages, 4 by 6; Dr. Max Jaenecke, Leipzig, Germany. Price 50 cents.

In addition to the 1914 calendar, this little book gives in condensed form a large amount of technical information regarding ribbon weaving, braiding and passementerie. The chapter on weaves is illustrated with a number of the more important weave drafts. The section on braiding includes illustrations of machinery and products. The book has a chapter on yarn calculations which is adapted for the mixture of English, metric and old weights and measures with which the Continental textile industry is afflicted. The text is in German. The volume is designed for a handbook for the mill.

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BUSINESS LITERATURE

Carrier Air Washers and Humidifiers for Public Offices and Industrial Buildings; the Carrier Air Conditioning Co., 39 Cortlandt St., New York.

This 128-page catalogue deals with the washing, cooling and controlling of humidity and the regulation of temperature in office buildings, theatres, hospitals, banks, hotels, houses and similar buildings, with special reference to the Carrier system of humidifying. The scientific principles underlying humidification are explained. The catalogue contains a detailed description of the Carrier apparatus, which is illustrated by many excellent engravings.

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Power Transmission Machinery; the Dodge Manufacturing Co., Mishawaka, Ind.

A condensed catalogue of 98 pages giving information and price list of the standard appliances and power transmission machinery manufactured by the Dodge Manufacturing Co., Mishawaka, Ind. It has been issued in the belief that for many purposes it will be found more convenient than the complete catalogue of 600 pages which covers all the products and includes dimension tables and other data that have been omitted from the smaller book. In addition to the illustrations and descriptive matter there are price lists and dimension tables for the different products.

Long Service Chain Drives; the Morse Chain Co., Ithaca, N. Y.

A 24-page booklet describing and illustrating the Morse silent chain drives. The great advantages of this drive are the positiveness of drive, which characterizes gearing, and the possibility of running at high speeds without the disagreeable noises attending gear drives. A table shows the recapitulation of thirty-one chain drives shipped to the Pittsburgh & Lake Erie Railroad Car shops, McKees Rocks, Pa., and installed in the fall of 1903. The average life per drive at this date is 8 2/3 years, which shows their durability and efficiency for long periods of time.

The Simplex Manual; The Simplex Wire & Cable Co., Boston, Mass.

A 92-page booklet which "just fits the pocket" as well as the needs of every electrical man who has anything to do with wiring problems. It is full of tables and other information of all sorts about insulated conductors and other matters electrical, and is equipped with an unusually complete index. Printed on a fine thin paper, and bound with stiff covers, the book will be sent on application to all those interested.

The Goodyear Mechanical Goods Catalogue; The Goodyear Tire & Rubber Company, Akron, Ohio.

The catalogue describes and illustrates the various Goodyear mechanical lines in a well-printed booklet of 112 pages, and in addition to this exposition of its product special folders and booklets will be issued, in which various mechanical goods such as belting, hose, packing, etc., will be taken up individually and discussed in greater detail. In a foreword, the general catalogue gives these reasons why Goodyear mechanical products are entitled to especial consideration in the trade.

CALENDARS

Thomas Wolstenholme Sons & Co., Inc., Philadelphia, Pa., send their New Year's greetings in the form of a wall calendar, showing the picture of their large worsted mills. The calendar pad has a sheet for every day in the year.

The Root Mfg. Co., Cohoes, N. Y., manufacturers of "Tivoli" standard underwear, have a beautiful calendar, reproduced from the original painting "In Bonnie Scotland" by Daniel Sherin, which is a typical scene of the Scottish Highlands, showing an arm of Loch Katrine. Down the road, that skirts the edge of the water, a shepherd is driving his sheep to pasture. The coloring is very fine.

Dinsmore Mfg. Co., Salem, Mass., manufacturers of mill sewing machines and supplies, present their New Year's compliments in the form of a calendar, showing a spirited naval scene entitled "The First Recognition of the American Flag." The subject is particularly appropriate to a Salem concern, as that city was long identified with the early marine and naval history of the United States.

E. O. Spindler, 350 Broadway, New York City, agent for the Dubied knitting machinery, has a striking and most attractive calendar of personal interest and an up-to-date subject. A beautiful girl is driving a motor boat at high speed. The scene is full of action.

The Textile Finishing Machinery Co., Providence, R. I., have a calendar which is particularly appropriate to their business and of historical interest. The top of the calendar is taken from a fresco discovered in the house of the Vettii in Pombei. Although the ruins have been buried for nearly 2,000 years, the frescos on the walls are found to be little damaged and their colors are almost as bright as when first painted. One of these frescos is entitled "Dyers," and from this the Textile Finishing Machinery Co. have had a special copy made, reproducing the original exactly in both design and coloring. This is probably the most ancient colored representation of the art of dyeing cloth. The different processes are shown and it would appear that in those days the dye liquor was kept in large earthenware bottles, and after having been poured on the cloth, was stamped into the cloth by the feet of the workmen. Other scenes depict the wringing out of the cloth, drying, inspection, the mending and the folding. Judging from the costume of the workmen, the dye houses of those days must have been very hot places to work in and there is not much difference at the present time. One thing that the Texile Finishing Machinery Co. has not been able to explain is that the artisans represented in this picture have wings. Whether these are intended to convey the idea that dyers are angels or whether the wings enabled them to fly away home after their work was done, is not apparent.

American Felt Co., Boston, Mass., has a calendar typical of their own business, the material of which is made in their own works. The upper part of the calendar is made of felt which appears to have been originally printed over the entire surface in black and then the design has actually been carved out, leaving the black lettering in bold relief against the red background. It is a striking piece of work and is unique in the calendar line

The Grosser Knitting Machine Co., Max Nydegger, 260 West Broadway, New York City, do not seem to find it difficult to live up to their reputation for beautiful calendars. This year's calendar represents a graceful and beautiful young woman standing by a balcony overlooking the lake. It is entitled "An Old Romance," and is reproduced from a painting by H. Bucher. The picture is outlined in such a way as to give the effect of a picture frame and the advertising features have been subordinated to the general artistic and decorative effect.

A reproduction of Edward Moran's water color, "The First Recognition of the American Flag," is the attractive feature of a monthly calendar recently sent out by the Klauder-Weldon Dyeing Machine Company of Amsterdam, N. Y., and Huddersfield, Eng. This picture is full of life and will be much appreciated by their many customers and friends.

The Acme Knitting Machine & Needle Co., Franklin, N. H., have issued an especially attractive calendar bearing a hand tinted scene of Lake George.

The William Kedward Dyeing Co., 246 Chestnut St., Philadelphia, Pa., dyers and bleachers of mercerized and cotton warps and skein yarn, are sending out to the trade an attractive wall calendar.

The Philadelphia Felt Co., Frankford, Philadelphia, Pa., makers of paper makers' felts and jackets. A particularly handsome wall calendar entitled "Highland Beauties," and suitable for office or library.

The E. H. Jacobs Mfg. Co., Danielson, Conn., are sending out a very dainty calendar which will be an ornament to any office.

Industrial Notes

S. A. FELTON & SON CO.

This old established concern has been compelled by the steady growth of their business to erect a very large addition to their already well arranged works. They are building a new factory, which will be adjoined to their present one, 50 by 40 feet, three stories high, and will equip it with the latest and most improved machinery for the proper carrying on of their business. Their offices and counting rooms will be moved to the new section and everything will be done for the economical handling of both the manufacturing and business ends.

This company manufactures a well established line of mill brushes, both hand and machine. Superiority of workmanship is one of their strong claims. They manufacture a large variety and can furnish any style to suit the needs of their customers, wire drawn, pegged, cemented, or pegged and cemented. They use the finest of Russian bristles and are in a position to guarantee prompt deliveries. We would recommend manufacturers to communicate with them when in need of anything in this line.

UNIVERSAL WINDING CO. BUYS NEW PLANT

The Auburn plant of the Maxwell-Bristol Motor Co., near Providence, R. I., has been purchased by the Universal Winding Co. and will be occupied by them as soon as they can move into the new quarters. This property comprises about 12 acres with 21 modern buildings. It has a frontage on the Pawtuxet River and on the main line of the N. Y., N. H. & Hartford Railroad, a siding from which runs into the plant. It also has a frontage on Elmwood Ave., the main thoroughfare from Cranston to Providence, on which runs the connecting trolley line between the two cities. The Auburn district is a part of Cranston adjoining Providence and is a well settled industrial suburb. This plant was occupied for a number of years by the motor company.

The Universal Winding Co. has for some time been badly cramped for room at its Providence works and has been considering various locations, not only in the vicinity of Providence, but in other industrial sections. It has an unusually fine lot of skilled employes, most of whom have homes in the vicinity of Providence, so it was considered wise to remain in that location, especially as the Atlantic seaboard possesses many advantages for concerns that do foreign business as well as domestic, as they get the benefit of low transportation on shipments by water all over the world. This will be particularly marked after the opening of the Panama canal. They also have a seaboard market for raw materials.

THE NEW PLANT RECENTLY PURCHASED BY THE UNIVERSAL WINDING COMPANY

The purchase of this large new plant at a time when there has been so much pessimistic talk about the future of the textile industry is evidence that this concern has no fears for the continued prosperity of its customers, and also shows their good sense in buying at this time when low prices have been prevailing for vacant industrial properties. The business and selling headquarters will remain as before at 95 South St., Boston.

G. B. Simmons has been appointed secretary of the Rockford Manufacturing Co., Rockford, Tenn.

THE TEXTILE MACHINERY EXHIBITION

The fourth national textile exhibition to be held in Mechanics Building, Boston, April 27 to May 2, 1914, is arousing much interest. Although the time of the exhibition is still three months away, more than three-fourths of available floor space of approximately 125,000 square feet has been sold. The remarkable growth of the exhibition, as compared with the original show which was held in 1909, demonstrates beyond question the value of bringing the prospective customer face to face with the newest and best developments in machines and processes for improving mill conditions and mill products.

This increased interest did not spring up over night, but is due to the untiring efforts of the members of The Textile Exhibitors' Association, under whose auspices each of the exhibitions have been held. The Textile Exhibitors' Association was formed in 1908 for the purpose of conducting exhibitions at such times as the trade demanded. Plans were also to be made whereby the various textile organizations could hold their meetings and conventions in the same building during the week of the exhibition. These plans have been carried out at each show, and the results have been beneficial to both the exhibitors and the members of the visiting Associations. There were about seventy exhibitors at this show, occupying an area of approximately 10,000 square feet. The display was very representative of the trade at that time, and the success of the exhibitor so great that it was voted to hold a second exhibition the following year. The 1910 exhibition, as was expected, proved even more successful than that of 1909. The number of manufacturers who exhibited increased from seventy to about one hundred and twenty-five. At the close of this exhibition, although many requests were made to hold the shows annually, the association decided that an exhibition every two years would in the end meet with popular favor.

Accordingly the third exhibition was held in 1912, and in connection with it the first power show, under the auspices of the New England Association of Commercial Engineers. Twenty-five thousand square feet of exhibition space was required for the displays of the one hundred and ninety exhibitors. This exhibition is so recent that its success is still remembered, and has resulted in the Association using the entire Mechanics Building, with its 125,000 square feet for the fourth exhibition, which is to be held next spring. The power department which proved such a successful and interesting feature of the last show, will have a special section reserved for this purpose at the coming exhibition. Booklets of attractive stickers advertising the exhibition have been issued by the management, and will be sent to any manufacturer upon request.

The coming exhibition will be more complete than any of its predecessors, and those who have not already made arrangements for making a display are advised to do so as soon as possible. There are still several choice locations available, and General Manager Chester I. Campbell will gladly furnish any information that may be desired. The following concerns have engaged space since the list was published in our November issue: American Enameled Brick & Tile Co., American Steam Gauge & Valve Mfg. Co., Atwood & Morrill, A. W. Buhlmann, A. W. Chesterton Co., Dearborn Chemical Co., Detroit Graphite Co., Dubied Machinery Co.; Brown, Spin-Wright Co.; The Fairbanks Co., William Firth, Gardner Grate Co., The Grosser Knitting Machine Co., Howard Brothers Mfg. Co., Keystone Lubricating Co., Laconia Mfg. Co., Arthur D. Little, Inc.

A VICTORY FOR THE OPEN SHOP

Indianapolis has been in the public eye as a battleground between employers and the unions, first, in connection with the street car strike and, later, the teamsters' strike. Rioting and violence consequent upon the street car strike, brought such indignant protests from the lovers of law and order as to compel the retirement of Mayor Shank after he had failed to control the rioting.

The teamsters' strike which followed, came to an early end through the determination of the business and law abiding interests to give proper protection to the teamsters who were willing to work. A force of 500 prominent citizens including bankers, lawyers and business men, were sworn in for special service, with the result that within four days after the strike was declared, traffic had been restored to nearly a normal basis and soon after the strikers sought employment at the former terms without recognition of the union.

Business men say the strike has been worth all it cost, because it has brought all business interests to an appreciation of the necessity of co-operative effort. The unions had forced the issue home to every inhabitant of the city. Indianapolis has always borne the reputation of a law abiding community and the spirit shown in this movement means that this condition will not be changed.

FASHION SHOW AT NEW YORK

Buyers and managers of stores from all parts of the United States, as well as the larger Canadian cities, are expected in New York early in February, 1914, to attend the Spring and Summer Fashion Show. This semi-annual Fashion Show is now a regular feature at the opening of each season in the metropolis.

The exposition of fashions for next spring and summer will be formally opened at one o'clock on February 5. The daily sessions thereafter will be from one to ten-thirty P. M. The Fashion Show will be held, as usual, at Grand Central Palace, and will be installed on the balcony floor.

At the last preceding semi-annual Fashion Show, which was held July 24 to Aug. 2, 1913, the attendance included merchants and buyers from forty-six states, as well as from Canada, Australia, France and Germany and the West Indies. It is expected that the attendance at the February show will be considerably larger, as the retail trade throughout the United States has warmly approved the plan and purpose of this Official Fashion Show in New York.

HORSES VS. TRUCKS

"The big risks that are taken with draft horses is not fully realized by some owners, for the reason that fate has happened to deal kindly with them," says H. B. Pruden of the KisselKar. "Nevertheless hundreds of work horses which cost from $200 to $400 die from illness or accident every day and in a large percentage of cases they have been in possession of the unfortunate owner but a short time. If the owner is a prudent man and has insured the animal, he is still out 50 per cent. of its cost, as the insurance companies will take only 50 per cent. risk on work horses.

"There recently came to my attention the case of an owner who lost twelve horses inside of three years at a loss of $2,400. He thereupon decided to buy a KisselKar truck. On this truck he carries insurance that fully protects him. If it is destroyed he will get its entire value. If he has a collision, injures a human being or destroys property, the insurance company must defend the suit, pay the costs and bear the burden of a verdict if the case is so decided. Should the machine be damaged the insurance company must make the repairs. He can go to sleep at night serene in the thought that his means of making a livelihood is never in jeopardy. This was a condition that was impossible when he depended on horses. The year around, but particularly in winter, the horse is susceptible to a multitude of diseases. He also is more than likely to fall and break a leg or to suffer temporary incapacity through weather conditions at a time when he is most needed."

WILL TAKE UNITED ACTION TO STOP IMPROPER TRADE PRACTICES

At its annual meeting in December the American Association of Woolen and Worsted Manufacturers passed the following resolutions:

"Resolved, that the president of this association be authorized to appoint one representative to act with three other representatives representing the National Association of Wool Manufacturers. The National Association of Cotton Manufacturers and the American Cotton Manufacturers' Association, who shall constitute a committee for the purpose of suppressing and prosecuting bribery and improper trade practices in the sale of mill supplies."

Similar action has now been taken by two of the associations referred to. The National Association of Cotton Manufacturers, through its president, Edwin Farnham Greene, with the approval of its executive committee, has appointed as its representative, W. A. Mitchell, agent of the Massachusetts Cotton Mills, in Lowell. Stuart W. Cramer, president of the American Association of Cotton Manufacturers, has appointed Ceasar Cone, of the Proximity Manufacturing Company, Greensboro, N. C.

John P. Wood, president of the National Association of Wool Manufacturers, is in sympathy with the movement and will recommend to his executive committee at their approaching meeting in January, that they join with the other associations.

The American Association of Woolen and Worsted Manufacturers has designated their representative, A. M. Patterson, president of the Waterloo Woolen Manufacturing Co.

The four textile associations which are now cooperating include in their membership most of the cotton, woolen and worsted mills of standing in the North or South.

TREATMENT OF MILL BELTS

The economy and efficient operation of a textile mill depends to considerable degree on the proper care of belts and this explains the importance of the Cling Surface method of treating the belt while it is in service. Economy in belt surface depends on keeping the belts pliable, clean and impervious to moisture. This is what Cling Surface accomplishes, it being a neutral preservative that keeps belts and ropes flexible, waterproof and durable. It penetrates the interior of the belt and protects the fibers both inside and out. The Cling Surface Co. recommend that lace joints on belts should be eliminated as they are a source of danger and liable to break under a severe load. The looser a Cling Surface treated belt is the greater is its arc of contact and pulling power, and this results in one of the most important advantages of the process.

To prove that a slack Cling Surface treated belt pulls right up to its maximum capacity without slipping, the manufacturers of the treatment offer this data on belts that were actually in operation at the time this article was written:

Width of Belt Inches	Thickness	Kind of Belt	Horse Power Transmitted	Tension lb. Per inch of width
10	—	canvas	85	90
12	Laminated	leather	82	92
19	2-ply	"	90	110
14	—	"	100	113
6	2-ply	"	25	114
20	3-ply	"	100	117
10	—	cotton	70	127
16	—	Painted canvas	300	264

These tensions are much higher than is usually attained with belts that are kept hitched up tight on the non-pulling side, and, better still, these slack, smooth-running belts give absolutely no trouble. They pull peak loads with ease.

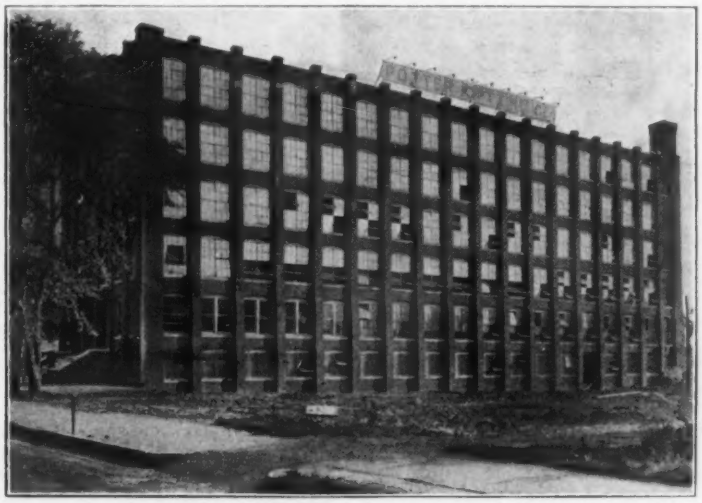
The action of moisture upon untreated belts is perhaps more destructive than any other influence, and unless a belt is rendered impervious to even the slightest surrounding moisture, stretching of the leather, crooked running and weakening of the cement between laps and plies are inevitable. Especially while a belt is idle, water or moisture tends to penetrate, and in textile mills, in warm, damp climates, or when plants are unheated during rainy seasons, some protection for the belting is essential, to say nothing about the changes in belt length due to weather changes. In tropical regions some belts have been known to change six inches in length in one day. The Cling Surface Co. state that by their method of treating belts these difficulties resulting from moisture are entirely obviated.

THE POTTER KNITTING COMPANY

The illustration shows the new building recently erected by the Potter Knitting Co., Springfield, Mass., who claim to be the largest manufacturers of infants' underwear in the country. While the company does not specialize in infants' underwear, that line comprises the bulk of the business. The average daily output for 300 days in the year is 250 dozen garments a day. Practically all of the business is direct with the retailers throughout the country, very little being shipped to the jobbing trade.

The business is housed in a five-story brick building of the latest mill construction, about 58,000 square feet of floor space being utilized. While not the largest knitting company in the United States, the Potter Company is one of the most complete and up-to-date in its appointments and equipment. The total working force, including operatives, salesmen and office help, numbers about two hundred and fifty people. The business was started about six years ago by Clifford B. Potter, the president, who had had sixteen years of experience with the Springfield Knitting Company, and was carried on at 216 Worthington St. until about the 1st of last June, when increased orders made it imperative that larger quarters be secured. The large plant on South Main St. has been erected and now provides plenty of room for any expansion for the next twenty-five years.

Nearly all of the output is taken up by American retailers, but a small amount of trade is carried on with Mexico.



THE NEW BUILDING OF THE POTTER KNITTING COMPANY

INFRINGEMENT SUIT

Another suit has been brought by the Cooper Underwear Co., this time against Meyer-Hess & Co., jobbers of Chicago, for selling goods alleged to infringe on their Kenosha-Klosed-Krotch union suit patents.

KLAUDER-WELDON CO. BRINGS SUIT FOR ALLEGED INFRINGEMENT OF PATENTS

The Klauder-Weldon Dyeing Machine Co. has recently brought suit in the United States District Court, for the District of Massachusetts, against John H. Giles, the John H. Giles Dyeing Machine Co. and the Mason Machine Works for alleged infringement of two patents of theirs.

FRED C. BRYANT

A few of the many friends of Fred C. Bryant gave him a surprise party some weeks ago at the Narragansett Hotel in Providence to assure him of their best wishes in his new position with the Parks & Woolson Machine Co., of Springfield, Vt., which he has recently accepted after a long engagement with the G. M. Parks Co., of Fitchburg.

Phillip C. Wentworth was the toastmaster of the occasion and the principal address was made by Fred W. Parks, who spoke of the pleasant relations that have always existed between his firm and Mr. Bryant and extending to him the best wishes of his former employers. He wound up by presenting the guest of honor with a handsome silver cigarette case. Each of the others present had a good word to say and Mr. Bryant was not left in doubt as to the feelings of his many personal and business friends.

ROSIN SOAP AND SIZE

The Arabol Mfg. Co., 100 William St., New York, recommend rosin soap for use in bleacheries and print works and rosin size for starching. They state that these products are uniform, free from impurities and thoroughly filtered, and have given satisfaction wherever used.

PREVENTING THE SPREAD OF FIRES IN FACTORIES

No matter what precautions are taken in the way of fireproof floors, enclosed escapes, and doors that open outwardly, the lives of the workers have frequently been jeopardized by the rapid spread of flames through inflammable material, even though the blaze has been confined to a single floor.

It is wise to provide means for extinguishing the flames before they have a chance to gain headway.

THE J. M. FYRO FIRE EXTINGUISHER

To this end many extinguishers have been put on the market, some of them highly efficient and others so complicated or difficult to use that they fail to fully meet the requirements of a serious emergency.

An extinguisher of recent invention which is creating considerable interest on account of its simplicity and efficiency is known as the "J-M Fyro." It discharges by means of compressed air a liquid gas said to be 40 times as effective as water. No mechanical force is required to operate it—there is no pumping, no tearing off of caps, no unscrewing of nuts, and no turning upside down.

All that is necessary is to hold it in an upright position and turn a small valve wheel about the size of a silver dollar. Its operation is so simple that a woman or child can use it.

It measures only 3 by 15 inches, can be aimed and operated almost as accurately as the pointing of a finger, and it is largely due to this certainty of aim that it is so efficient, as none of the extinguishing fluid is wasted.

In many extinguishers the stream has such a force that it is often shot through the flames, a large part of it going to waste. J-M Fyro throws a spray as well as a stream,—the spray can be thrown a distance of 10 feet; the stream 25 feet. The spray is most effective on small fires scattered over a comparatively large area; the stream is usually best for small fires concentrated in one spot. The advantage of the spray is that it will cover the entire blaze of the average incipient fire so that all of the liquid gas volatilizes. In so doing the gas forms a dense combustion-arresting "blanket" which is five times as heavy as air. And on account of its density and weight it quickly envelopes the flames, displacing oxygen and extinguishing the fire.

As the extinguishing fluid in the J-M Fyro contains no moisture, it is a non-conductor of electricity and can accordingly be used in electric fires without danger of short-circuits. The J-M Fyro is one of the few extinguishers that can also be used on gasoline and electric fires. J-M Fyro fluid being non-corrosive, cannot cause rust, and will not injure the most tender skin nor harm the most delicate fabrics or furnishings.

The J-M Fyro Fire Extinguisher is manufactured by the H. W. Johns-Manville Co., New York. This company has recently issued an interesting little book on the subject of fires, and will be glad to mail a copy of same to anyone interested.

IMPORTANT PATENT SUIT DECIDED

A final decision from the ultimate Court has just been rendered at Cincinnati sustaining the patent of J. C. W. Greth, No. 775,901, of Nov. 22, 1904, for Water Purifying Apparatus described by the sustained claim 11, of that patent, which reads as follows:

"(11)—In continuous flow water purifying apparatus, the combination with a single tank containing the chemical reacting compartment, and an upward flow settling compartment, of a series of independent gravity filters carried on the top of the tank, fed by overflow from the settling compartment, and each having means for washing the filter and a valve to close communication with the settling compartment, whereby any one of said filters may be isolated and washed, while the flow continues through the others from said supporting tank."

COMPULSORY INSURANCE

A Nottingham message states that a remarkable maternity case is reported from Long Eaton, where the wife of A. Malvern, hairdresser, has given birth to a child after having five weeks ago given birth to another. At that time the doctor hinted that another child would be born, but it was not expected that the event would be deferred so long. Mrs. Malvern was in a grave condition for some hours, but yesterday evening both children and mother were well and progressing favorably.

The question now arises are the children twins, and are the parents entitled to double benefit under the Insurance Act?—The Manchester Guardian.

Pennsylvania, Port Clinton. Messrs. Robinhold & Robinhold, now operating a plant for the manufacture of shirts, are considering a proposition for the installation of machinery on which to manufacture a line of ladies' ribbed underwear, light weight goods. What the equipment will consist of or when it will be started has not been stated.

GRATON & KNIGHT ESTABLISH NEW FACTORY

The Graton & Knight Mfg. Co., of Worcester, Mass., have recently purchased and equipped a branch factory at Detroit, Mich.

They took over the plant and business of the Wayne Belting Co., located at 112 Second Ave., and have transferred the equipment, opening their Detroit factory at 266 Jefferson Ave., E. In this factory they will manufacture the same standard line of leather belting and automobile specialties which they have heretofore produced at Worcester for their Michigan trade. The new factory is in charge of C. F. Urquhart.

Aside from manufacturing, they will do all kinds of repair work at the Detroit plant, and their object for opening this factory is to give them better facilities for taking care of their trade in that section, both as to orders for new products as well as for repair work. In short, the opening of the Detroit factory is simply one more step forward in the G. & K. Service.

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BUSINESS IN EUROPE

E. W. S. Jasper, president of the Continental Latch Needle Co., 120 Liberty St., New York, has just returned from a short business trip to Germany. He reports that there is a gradual slackening up of general business all over Europe, but that if the consumption of needles is any guide, knitting mills must still be very busy. In addition to visiting the knitting centers of Germany, Mr. Jasper went to Leicester, Eng., where business seemed very good.

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GOODYEAR'S MECHANICAL GOODS DEPARTMENT

The mechanical goods department of The Goodyear Tire & Rubber Company, Akron, O., is only nine months old, yet in that time an annual business passing the million dollar mark has been built up, and Manager I. R. Bailey announces that it will be twice that figure for 1914. Goodyear officials declare this record shows the value of an advertised trade-mark and of a firm's established reputation for quality, as well as being evidence how business methods change.

Goodyear's first rubber hose was made in June. The daily average production is now 20,000 feet. The company's mechanical line includes a wide variety of products. In hose the line is especially complete, and runs from the smallest air hose to the largest suction hose, special qualities and types being adapted to conveying all manner of fluids,—oil, water, etc., as well as steam hose, air blast hose, cotton rubber-lined fire and mill hose and braided ply continuous length hose for garden, water and air purposes.

Goodyear makes a complete line of packings and beltings, under the direction of experts able to choose the best methods and the best materials out of a wide experience in manufacture and observation of the work of their products. The department at the factory is running 24 hours a day.

JOHN H. GILES DYEING MACHINE CO. WILL PROTECT CUSTOMERS

John H. Giles Dyeing Machine Company wish to inform the trade that suit has been brought against them by the Klauder-Weldon Dyeing Machine Company of Amsterdam, N. Y., on the ground of alleged infringements on letter patents No. 999304 dated August 1, 1911, and No. 1057635 dated April 1, 1913. The Giles Co. state they believe that there has been no infringement of these patents and that they will protect their friends and customers by suitable bond.

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EUROPEAN TRIP

A. Suter, textile engineer, and his secretary, Gordon Suter, left New York on the Mauretania for Europe on Tuesday, December 16th. They go in search of new methods and machinery, traveling in Germany, Switzerland and France. It is their intention to return via Italy in February.

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ANNUAL DANCE GIVEN BY THE LUNKENHEIMER COMPANY

On Saturday evening, December 13th, possibly the largest attended dance ever given in Cincinnati took place at the armory in that city. The event was the annual dance and entertainment given by The Lunkenheimer Company to its employes and their families, at which it is estimated that about 5,000 were present. The company prides itself upon the high quality of its high grade engineering products, but as the officers admit, this high quality is due, to a great extent, to a like quality of the men employed and the harmony that exists among them. One of the principal objects of these annual entertainments is to aid in maintaining this harmony, and by bringing the employes together in a social way, meeting each other in a different light from that of business, a feeling of good fellowship is created, such as could not be accomplished in any other manner. Again, the size of the Lunkenheimer plant is of such large proportions that the workmen of one department do not have an opportunity of often meeting those of another, but by congregating them in a manner which it has been the practice of the company to do for many years past, they learn to know each other, so that when they do meet in the factory or any other place, they meet as friends and not as strangers. The highest officials of the company and their families mingled freely with those holding minor positions, making it appear as though the entire body was one large family.

The armory at which the entertainment was given is the largest hall for purposes of this kind in Cincinnati. It was beautifully decorated with holly and red, white and blue displays. A temporary stand was erected in the center of the hall for the First Regiment Band, which furnished the music for the dancers, the band consisting of forty pieces of picked musicians.

During the week of December 8th, all of the traveling salesmen representing the company assembled for a general conference, and they in a body also attended the affair.

MECHANICAL DIFFERENTIATION

By CHARLES R. TROWBRIDGE, of the Dodge Mfg. Co.

The older text-books on mechanics included, among various arbitrary divisions of the subject, the classification of the so-called elementary machines, these including the lower, screw, wedge, inclined plane, pulley and wheel-and-axle. Modern treatises ignore this time-honored list, or mention it only to point out that the wedge and the inclined plane are practically identical, and that the screw is simply the development of an inclined plane upon a cylinder, and that the wheel-and-axle is but a continuous form of lever.

Probably this continuous lever, the modern belt pulley, is better entitled to a place for itself than some other devices which have been suggested, for there is hardly a product of human ingenuity which has so wide an application and so extensive a series of users. In nearly every other system of mechanical contrivances the element which receives the effort is wholly different from that which is at the sending point. With belt transmission, however, the energy contained in the revolving shaft is passed outward through the continuous leverage of the arms of the pulley to the rim, thus increasing the peripheral velocity many times, and then silently and imperceptibly converting the rotary movement into the linear velocity of the belt or rope it sends it flying across space to a similar pulley, where by a reversal of every operation the receiving shaft takes it up. There is probably no simpler operation in the entire field of mechanics, and yet there is not one which is more useful, more widely applied, and when properly installed, more efficient.

It is in this last feature, proper installation, that the opportunity comes for the work of the transmission engineer. A pulley for belt or rope transmission, is not merely a combination of hub, arms and a rim. It must have strength to resist belt-pull, stiffness to resist flexure and vibration, truth of form and of balance, and with these essentials there should be added convenience of installation.

So far as materials are concerned, wood, steel, wrought and cast iron, all have been employed, separately or in combination. The high coefficient of friction between the leather belt and the surface of a wooden rim has made the use of wood advantageous, either with wooden arms or an iron spider, while the lighter weight of the wooden rim is also desirable for high speeds, when centrifugal stresses have to be considered. Especially desirable for general factory service is it to have line-shaft pulleys made in halves, permitting them to be placed at any desired point on the shaft without disturbing hangers, couplings or other pulleys which may be already in place.

The placing and accurate lining of shafting, a difficult job in itself, is so readily disturbed by uncoupling and replacing a section that any device which renders this derangement unnecessary is to be welcomed. Since the split pulley, either of wood or of iron, has become a standardized product of manufacture, and especially since the introduction of split bushings has overcome the difficulty of fitting shafts of various diameters, it has been found practicable to install line shafting upon such a permanent system as to render any removal of flange couplings or similar devices wholly unnecessary.

It might have been supposed that there was little opportunity for the improvement of such a simple product as an ordinary pulley, an article which might be sent to the lathe from the foundry, and on to the customer almost without thought. The event has proved, however, that in just such a simple article there was room for skillful design, accurate and refined construction, and the application of inventive talent of a high order.

AMERICAN AGENTS FOR WORSTED MACHINERY

Speed & Stephenson, 170 Summer St., Boston, have been appointed American agents for the Maschinenfabrik vorm F. J. Grun, Gebweiler, Alsace and Lure, France. This firm is the very large and well known machine builders of international repute, and manufacture a full line of machinery for preparing, combing, drawing and spinning worsted yarns on the French system. They also make special machinery for preparing and spinning yarns from silk, silk waste, ramie and cotton waste, and make a specialty of mixing and intersecting gill boxes. With a long and favorable acquaintance of Speed & Stephenson in this country, and their practical experience in this particular line, we extend our congratulations, not only to them but to the principals they represent for this connection.

BOSTON BELTING CO. MOVES OFFICES

After January 1st the general offices and warerooms of the Boston Belting Co. will be located at 84 Linden Park St., near Roxbury Crossing, Boston. This is adjacent to their large factories and enables them to have much more room and better facilities than at their old office on Devonshire St. All mail should be addressed to "Box B, Roxbury Crossing Station, Boston, Mass." For the present a down town office will be maintained at Room 602, Columbian National Life Insurance Co.'s Bldg., 77 Franklin St., Boston. Their Roxbury plant is very near the Roxbury Station, the first suburban stop on the N. Y., N. H. & Hartford R. R., and is also very near the Dudley St. Elevated Station on the rapid transit trolley system. A private branch telephone exchange connects all departments.

FERALUN SAFETY TREADS

At the first International Exposition of Safety and Sanitation held recently in New York the American Abrasive Metals Co. were awarded a gold medal diploma for their Feralun safety treads, which have extensive uses for anti-slip surfaces where people must walk.

The Seneca Oil Mills, Seneca, S. C., will add to their electric drive equipment one 35 h. p., two 75 h. p. and one 100 h. p. motors which have been purchased from the General Electric Company.

TREASURY DECISIONS

T. D. 33929. Nov. 29, 1913. Marking of bolting and press cloths. Article 705 of the Customs Regulations of 1908 is hereby amended to read as follows: Bolting cloths composed of silk, imported expressly for milling purposes, will be admitted to free entry when stamped with a mark extending from selvage to selvage, at intervals of not more than 4 inches, and bearing the words "Bolting cloth, expressly for milling purposes" in block letters 3 inches in height.

Press cloths composed of camel's hair, imported expressly for oil milling purposes, if cut into lengths not to exceed 72 inches and woven in widths not under 10 inches nor to exceed 15 inches, and weighing not less than one-half pound per square foot, will be admitted free of duty provided that the same are marked so as to indicate that they are for such purposes. Press cloths to be entitled to free entry should be required to be stamped with a mark extending lengthwise along the center of the cloth and bearing the words "For oil milling purposes" in block letters 3 inches in height and leaving not more than 10 inches of uncovered surface of cloth at either end. The stamping should be of a permanent character, but acids or chemicals of an injurious character should not be used.

T. D. 33948. Dec. 5, 1913. Drawback on cotton drills. Drawback is hereby allowed under paragraph O of section 4 of the tariff act of October 3, 1913, and the drawback regulations (T. D. 31695 of June 16, 1911), on cotton drills manufactured by the Riverside & Dan River Cotton Mills, of Danville, Va., for the account of G. A. Stafford, of New York, N. Y., with the use of imported aniline colors or dyes.

As soon as practicable after the first day of January and July of each year a sworn abstract from a manufacturing record, which shall be kept, shall be filed in your office covering the manufacture of cotton drills during the preceding six months, which abstract shall show, in addition to the usual data, the quantity of imported aniline colors or dyes used in dyeing cotton for use in the manufacture of cotton drills for exportation with benefit of drawback, the quantity of dyed cotton produced, the quantity of yarn manufactured from such dyed cotton, and the quantity of waste incurred, the quantity of cotton drills produced from such yarn, stating separately the quantity of drills containing the dyed yarn in both warp and filling, and the quantity of drills containing the dyed yarn only in the warp.

T. D. 33951. Dec. 5, 1913. Cotton cloth, Jacquard figured. Attention is invited to the department's decision of November 22, 1913 (T. D. 33907), wherein it is held that woven cotton cloth, jacquard figured, is properly dutiable under paragraph 258 of the tariff act of October 3, 1913, and not under paragraph 252 of the said act.

It will doubtless be difficult in some cases definitely to determine whether cotton cloths are jacquard figured within the meaning of paragraph 258 or figured by other processes of weaving or attachments to the loom, and, therefore, dutiable under paragraph 252. In such cases samples of the figured cotton cloths should be forwarded to the appraiser at the port of New York for an expression of his views as to whether the goods are jacquard figured.

T. D. 33964. Dec. 8, 1913. Drawback on measuring tapes. Drawback on measuring tapes manufactured by the Keuffel & Esser Co., of Hoboken, N. J., with the use of imported woven tapes. A manufacturing record shall be kept, which shall show, in addition to the usual data, the quantity, dimensions, and character of the imported woven tape used in the manufacture of each lot of the measuring tape manufactured for exportation with benefit of drawback, the number of measuring tapes of each style produced, describing the same as in the sworn statement of the manufacturers, transmitted herewith, the length and width of the imported tape appearing therein, the quantity of waste, the value of the imported material used, and the value of the waste incurred. A sworn abstract from such manufacturing record shall be filed with each drawback entry.

T. D. 33973. Dec. 10, 1913. Cotton quilts. You report that it is the practice at your port to assess duty upon cotton quilts, if plain woven, at the rate of 25 per cent. ad valorem under paragraph 264 of the tariff act of October 3, 1913; if woven with a tapestry pattern, at the rate of 35 per cent. ad valorem under paragraph 258 of the tariff act; and if woven with jacquard figures, at the rate of 30 per cent. ad valorem, as jacquard-figured manufactures of cotton under the same paragraph.

As the provision for quilts, cotton chief value, in paragraph 264 is qualified by the phrase "not otherwise provided for," and the provisions for tapestries and jacquard-figured manufactures of cotton in paragraph 258 are without limitation, the department is of the opinion that the question of the proper classification of cotton quilts, if woven with tapestry patterns or jacquard figures, should be judicially determined. You are accordingly hereby authorized to continue the practice prevailing at your port in the classification of these quilts.

T. D. 33978. Dec. 13, 1913. Classification of silk mufflers. Your attention is invited to the decision of the United States Court of Customs Appeals (T. D. 33914), involving the classification of knitted silk mufflers. In view of the foregoing, you are hereby directed to continue the practice prevailing at your port of assessing duty upon the articles under consideration "as articles of wearing apparel of every description, including knit goods," under paragraph 317 of the present tariff act, to the end that this case may be again reviewed by the Court of Customs Appeals on a fuller record.

T. D. 33987. Dec. 17, 1913. Drawback on ladies' veils. Drawback is hereby allowed under paragraph O of section 4 of the tariff act of October 3, 1913, and the drawback regulations (T. D. 31695 of June 16, 1911), on ladies' veils manufactured by Martin Viavaschi, of New York, from imported veilings, mousseline de soie, nettings and plain malines, for the account of Stern & Stern, New York.

T. D. 33988. Dec. 17, 1913. Drawback on paper makers' felts and jackets manufactured by the Albany Felt Co., of Albany, N. Y., with the use of wool in the grease, imported prior to December 1, 1913.

Recent Textile Patents

BOBBIN-STRIPPER. 1,080,942. Richard Walworth, Waltham, Mass.

BOBBIN-STRIPPING Machine. 1,080,794. Richard Walworth, Waltham, Mass.

CLOTH SHEARING Machine. 1,081,265. Edward F. Butler, Cavendish, Vt.

DRYING APPARATUS Feed Mechanism. 1,081,238. Frederick Kukkuck, St. Louis, Mo.

DYEING and Printing. 1,081,621. Carl Mollenhoff, Leverkusen, Germany.

ELASTIC FABRIC. 1,081,676. Waldemar Kops, New York.

FABRIC FOLDING Device. 1,080,206. Harry S. Burnham, Brant, N. Y.

KNITTING MACHINE Clocking Attachment, Circular. 1,081,254. Frank W. Robinson, Reading, Pa.

KNITTING MACHINE. 1,082,239. Morris G. Rosenthal, Mentor, O.

KNITTED WEB, Welted. 1,081,778. Robert W. Scott, Leeds Point, N. J.

KNITTED WEB and Making Same. 1,081,779. Robert W. Scott, Deeds Point, N. J.

KNITTING MACHINE. 1,081,410. Harry D. Shimer, Muskegon, Mich.

KNITTING MACHINE. 1,081,043. Frank D. Holmes, Detroit, Mich.

KNITTING MACHINE, Circular. 1,081,179. Frank B. Wildman, Norristown, Pa.

KNITTING MACHINE Stop Motion. 1,081,180. Frank B. Wildman, Norristown, Pa.

KNITTING MACHINE, Circular. 1,080,857. William Spiers, Leicester, Eng.

LOOM WARP Stop Motion. 1,082,045. Alonzo E. Rhoades, Hopedale, Mass.

LOOM for Weaving Bags. 1,081,384. Simeon S. Jackson, Readville, Mass.

LOOM STOPPING Mechanism. 1,082,086. Albert G. Koechlin, Steinen, Germany.

LOOM FEELER Motion. 1,081,909. John Hendry, Lawrence, Mass.

LOOM FILLING Stand. 1,082,186. Francis E. Ashton, Exeter, N. H.

LOOM WEFT Carrier Chute, Automatic Weft Replenishing. 1,082,390. E. H. Ballou, Pawtucket, R. I.

LOOM HEDDLE Frame. 1,082,317. Joachim Giardino, West New York, N. J.

LOOM SHUTTLE. 1,082,049. Edward S. Stimpson, Hopedale, Mass.

SPOOL UNWINDING Device. 1,080,739. John L. Walsh, Chicago, Ill.

SHUTTLE, Oscillatory. 1,082,003. Robert Zahn, Plauen, Germany.

SHUTTLE. 1,081,169. Noboru Terashima, Shinnakadori, Japan.

SPOOLING MACHINE Differential Motion. 1,080,965. Paul Grosser, Markersdorf, Germany.

TEXTILE MACHINE. 1,081,423. Thomas E. Bingham, Manchester, Eng.

TWISTING MACHINES, Thread Stop Motion for Gripping a Broken Thread in. 1,082,016. Boleslaw Dutkiewicz, Lodz, Russia.

WARP STOP Motion. 1,082,428. Hans Koch, Dietikon, Switzerland.

YARN RELEASING Device for Spools. 1,081,716. Wilfred Boulais, Ipswich, Mass.

YARN TWISTING Mechanism. 1,081,328. Daniel Porter, New Brookland, S. C.

RECENT TEXTILE TRADE-MARKS REGISTERED

69,321. Cotton dress goods. Mark: Jap-A-Crepe. Owner: B. Hart & Bro., San Francisco, Cal.

62,009. Hosiery. Mark: Evryman. Owner: Aetna Hosiery Co., Worcester, Mass.

65,168. Cotton piece goods. Mark: Amco. Owner: Arista Mills Co., Winston-Salem, Mass.

73,193. Knit goods. Mark: Saxony Knitting Mills, Needham, Mass.

73,407. Hosiery. Mark: Waynew. Owner: Wayne Knitting Mills, Fort Wayne, Ind.

73,163. Cotton piece goods. Mark: Kroy. Owner: York Mfg. Co., Saco, Me.

70,120. Hosiery. Mark: Nyus. Owner: The H. B. Claflin Co., New York.

72,892. Piece goods of cotton and linen. Mark: Carnation. Owner: The Pittsburgh Dry Goods Co., Pittsburgh, Pa.

73,424. Knit underwear. Mark: Ro-Tex-Co. Owner: Rome Textile Co., Rome, N. Y.

73,469. Velvets. Mark: Baveno. Owner: Balstone, Cooke & Co., Manchester, Eng.

73,946. Cotton piece goods. Mark: Inertex. Owner: Franklin Mfg. Co., Baltimore, Md.

66,772. Hosiery. Mark: Knickerbocker Maid. Owner: Lindeke, Warner & Sons, St. Paul, Minn.

72,836. Woolen piece goods. Mark: Fisken. Owner: Fisher & Kennedy, New York.

73,037. Cambric, nainsook, muslin, etc. Mark: Bridal. Owner: Carson, Pirie, Scott & Co., Chicago, Ill.

73,146. Hosiery. Mark: Encore. Owner: Encore Hosiery Co., New York.

73,196. Cotton sewing thread. Mark: Silkette. Owner: The American Thread Co., Jersey City, N. J.

73,420. Piece goods of wool. Mark: Lisbari. Owner: Lister & Co., Bradford, Eng.

73,921. Silk and cotton dress goods. Mark: Golfine. Owner: Haas Bros., New York.

73,923. Silk dress goods. Mark: Railine. Owner: Haas Bros., New York.

C. E. RILEY COMPANY

65 Franklin Street, .. BOSTON, MASS.

COTTON AND COTTON GOODS YARNS

DIRECT IMPORTERS OF EGYPTIAN COTTON

COTTON WOOLEN WORSTED MACHINERY

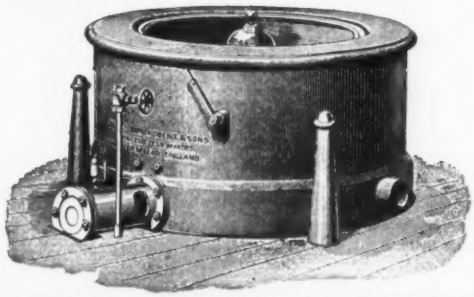
Thomas Broadbent & Sons,

Huddersfield, Eng.

PATENT DIRECT STEAM DRIVEN

HYDRO-EXTRACTORS

OVER 3500 IN USE. ALSO ELECTRICALLY DRIVEN



SUSPENDED ON LINKS. REQUIRING NO EXPENSIVE FOUNDATIONS.

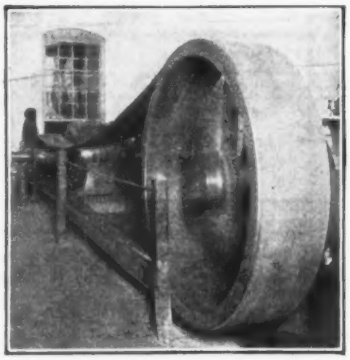
C. E. RILEY COMPANY, Sole Agents 65 Franklin St., Boston, Mass.

Machines Kept in Stock in Boston

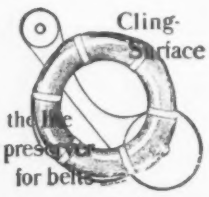
Cling-Surface Does It

The belt in this photograph is 3-ply;
It is transmitting 220 horse power;
Is under a tension of over 1445 pounds on the pulling side; and yet

THE TOP SIDE RUNS SLACK



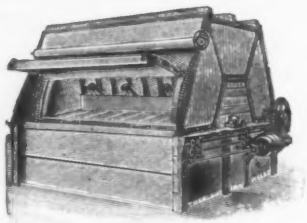
When this belt was photographed, (in the plant of the Wilkesbarre Light Co., Wilkesbarre, Pa.) it was pulling 220 horse power. Looks as though it were pulling nothing, doesn't it? Treated with Cling-Surface a belt *can't* slip, especially if it is provided with a fairly liberal arc of pulley contact as above.



Cling-Surface saves enough coal and lubricating oil to pay for the Cling-Surface many times. It also waterproofs and lengthens the life of the belt and saves babbitt, bearings, labor and worry. We can back all our claims with plenty of decisive proof of which the above photograph is just *one* example. We have thousands of installations doing equally well. Send your trial order now.

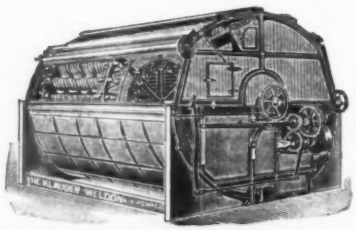
Cling-Surface Co 1051 Niagara St Buffalo N Y

New York Boston Chicago Denver Memphis Etc 64



Raw Wool and Cotton Machine.

MACHINES
sold on
2 MONTH'S TRIAL
YOU
TAKE
NO
RISK

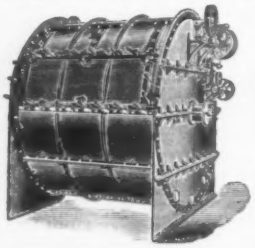


Skein and Slubbing Machine.

KLAUDER-WELDON DYEING MACHINE COMPANY

HUDDERSFIELD, ENGLAND. *AMSTERDAM, N. Y.*

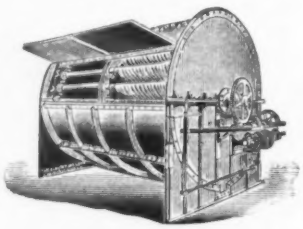
Machines for Dyeing, Bleaching and Scouring Woolen, Worsted, Cotton and Silk Skeins—Slubbing—Raw Cotton and Wool, Waste, Rags, Shoddy, Hosiery, Underwear, Hats, Caps, Knit Cloth, Tapes, etc.



Sulphur Hosiery Machine.

Special Machines for Sulphur Colors

WILL EARN THEIR COST IN LABOR ALONE
IN FROM
6 TO 12 MONTHS
ACCORDING TO CAPACITY



Sulphur Skein Machine.

Buyers' Index

This department is conducted for the benefit of our subscribers. The addresses of builders of mill machinery and dealers in mill supplies, whose names appear in the following classified index, may be found upon referring to their advertisements. The Alphabetical Index to advertisers follows this classified list. Buyers who are unable to find in the classification here given such machinery or supplies as they desire, are invited to communicate with the publishers, who can, in all probability, refer them to proper sources. Advertisers whose names do not appear under headings to which they are entitled will please notify the publishers.

Accountants and Systematizers.
Gunn, Richards & Co.

Air Moistening System.
——See Humidifying Apparatus.

Architects and Mill Engineers.
Cramer, Stuart W.
Dyer, W. E. S.
Ferguson, John W.
Main, Chas. T.
Myrick, J. W. H.
Weston, Robert Spurr.

Asbestos Products.
Johns-Manville Co., H. W.

Asphalt Tanks.
Graver Tank Works, Wm.
Scaife, W. B., & Sons.

Automatic Feeds for Cotton and Wool.
Leigh & Butler.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Saco-Lowell Shops.
Sargent's, C. G., Sons.
Schofield, Wm., Co.
Woonsocket Machine & Press Co.

Baling Presses.
Boomer & Boschert Press Co.
Philadelphia Drying Mchy. Co.

Ball Bearings.
Hess Bright Mfg. Co.
New Departure Mfg. Co.
S. K. F. Ball Bearing Co.

Bandings.
Lambeth Rope Corporation.
Sternberg, Fred, & Co.

Bands, Labels and Tickets.
Acme Print Co.

Baskets.
Lane, W. T., & Bro.

Beams (Steel).
Mossberg, Frank, Co.

Beamers.
Crompton & Knowles Loom Works.

Belting.
Bond, Chas., Co.
Gandy Belting Co.
Graton & Knight Mfg. Co.
Hood, R. H., Co.
——See also Mill Supplies.

Belt Cement.
Graton & Knight Mfg. Co.

Belt Dressing.
Cling-Surface Co.
Dixon, Jos., Crucible Co.
Graton & Knight Mfg. Co.
Stephenson Mfg. Co.

Belt Tighteners.
American Tool & Machine Co.
Dodge Mfg. Co.
Hunter, James, Machine Co.

Bindings.
——See Tapes and Braids.

Bleaching Kiers.
Arlington Mch. Wks.
Birch Bros. (Albert Birch, prop.).
Buhlmann, A. W.
Lockwood Manufacturing Co., The.
Philadelphia Drying Machinery Co.
Stearns Lumber Co., A. T.
Textile-Finishing Machinery Co.

Bleaching Materials.
Bosson & Lane.
Electro Bleaching Gas Co.
Marston, John P.
Roessler & Hasslacher Chemical Co.
Seydel Mfg. Co., The.
Worden Chemical Co.

Blowers and Blower Systems.
Autoforce Ventilating System.
Carrier Air Conditioning Co.
Philadelphia Drying Machinery Co.
Sturtevant, B. F., Co.

Bobbins, Spools, Shuttles, Etc.
American Supply Co.
American Textile Specialty Mchy. Co.
Leigh & Butler.
Mossberg, Frank, Co.
Tebbets, E. L., & Co.

Bobbin Winders.
Altemus, J. K.
Lever, Oswald, Co.
Universal Winding Co.

Boilers.
——See Steam Boilers.

Boxes, Box Shooks, Etc.
Pearson, J. T.

Box Tops.
Acme Print Co.

Braiding Machinery.
New England Butt Co.
Textile Machine Works.

Braids.
——See Tapes, Braids and Edgings.

Brass Hinges.
Root, C. J., Co.

Bridges.
Scaife, W. B., & Sons.

Burlers, Speckers, Menders.
Providence Mending Co.

Brushers.
——See Napping Machines.

Brushes.
Cocker, M., & Co.
Felton, S. A., & Son Co.
Mason Brush Works.
Parks & Woolson Machine Co.

Brushing Machines.
Buhlmann, A. W.
Parks & Woolson Machine Co.

Burr Pickers.
Curtis & Marble Machine Co.
Sargent's, C. G., Sons.
Smith & Furbush Machine Co.

Button-Hole Machines.
Reece Button-Hole Machine Co.

Button Sewing Machines.
Union Button Sewing Machine Co.

Calico Printers' Machinery and Supplies.
Arlington Mch. Wks.
Birch Bros., Somerville Machine Wks.
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Lockwood Manufacturing Co., The.
Schwartz, L. H. A., & Co.
Somerville Mach. Wks. (Albert Birch, prop.).
Taunton-New Bedford Copper Co.
Textile-Finishing Machinery Co.
——See also Dyeing, Drying, Bleaching, Machinery, etc.

Canvas Baskets.
Lane, W. T., & Bro.

Can Spindles.
American Textile Specialty Mchy. Co.

Carbonizing Machinery.
Birch Bros., Somerville Machine Wks.
Buhlmann, A. W.
Lockwood Manufacturing Co., The.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sargent's, C. G., Sons.
Schwartz, L. H. A., & Co.
Somerville Mach. Wks. (Albert Birch, prop.).
Textile-Finishing Machinery Co.
Tolhurst Machine Works.

Card Clothing.
Ashworth Bros.
Buhlmann, A. W.
Firth, William, Co.
H. & B. American Machine Co.
Leigh & Butler.
Richards, Atkinson & Haserick.
Riley, C. E., Company.
Schwartz, L. H. A., & Co.

Card Feeds.
——See Automatic Feeds.

Card Grinding Machinery.
Buhlmann, A. W.
Dronsfield Bros.
Entwistle, T. C., Co.
Firth, William, Co.
Leigh & Butler.
Richards, Atkinson & Haserick.
Riley, C. E., Company.
Smith & Furbush Machine Co.

Carpet Machinery.
Altemus, Jacob K.
Crompton & Knowles Loom Works.
Curtis & Marble Machine Co.
Parks & Woolson Machine Co.
Philadelphia Textile Machinery Co.
Smith & Furbush Machine Co.
Textile-Finishing Machinery Co.

Castings.
Dodge Mfg. Co.
Hunter, James, Machine Co.
Lunkenheimer Co., The.
Schofield, Wm., Co.

Caustic Soda.
Wing & Evans.

Cell Driers.
Cell Drier Machine Co.

Cement Pans.
Scaife, W. B., & Sons.

Chain Belts.
Morse Chain Co.
Peerless V Belt Co.

Chemists.
Emerson Laboratory.
Little, Arthur D., Inc.
The Lunkenheimer Co.

Chenille Machinery.
Eppler's, John, Machine Works.

Cling Surface.
Cling-Surface Co.

Clocks.
Pettes & Randall Co.
Watchman's Clock & Supply Co.

Cloth Boards.
Chaffee Bros.
Pearson, J. T.
Richardson Brothers.
Textile-Finishing Machinery Co.

Cloth Cutting Machines.
Firth, William, Co.
Oswego Machine Works.

Cloth Dryers.
——See Drying Machinery.

Cloth Expanders.
American Finishing Machinery Co.
Arlington Mch. Wks.
Birch Bros. Somerville Machine Wks. (Albert Birch, prop.).
Leyland, Thomas, & Co.
Lockwood Manufacturing Co., The.
Somerville Mach. Wks. (Albert Birch, prop.).

Cloth Shrinking Machinery.
Reliance Machine Works.

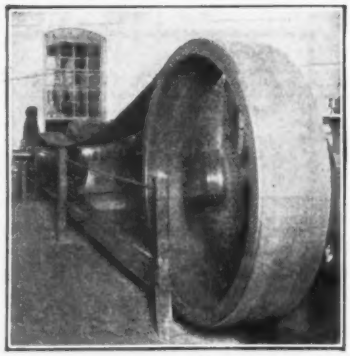
Cloth Testers.
Firth, William, Co.
Perkins, B. F., & Son, Inc.
Shuttle Machine Co.
Suter, Alfred.

Alphabetical Index to Advertisers, with page numbers, follows this list.

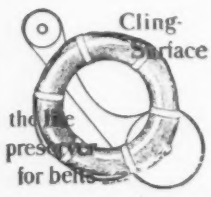
Cling-Surface Does It

The belt in this photograph is 3-ply;
It is transmitting 220 horse power;
Is under a tension of over 1445 pounds on the pulling side; and yet

THE TOP SIDE RUNS SLACK



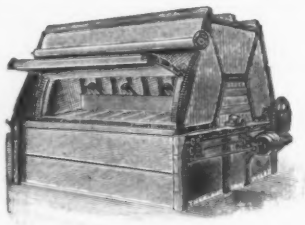
When this belt was photographed, (in the plant of the Wilkesbarre Light Co., Wilkesbarre, Pa.) it was pulling 220 horse power. Looks as though it were pulling nothing, doesn't it? Treated with Cling-Surface a belt *can't* slip, especially if it is provided with a fairly liberal arc of pulley contact as above.



Cling-Surface saves enough coal and lubricating oil to pay for the Cling-Surface many times. It also waterproofs and lengthens the life of the belt and saves babbitt, bearings, labor and worry. We can back all our claims with plenty of decisive proof of which the above photograph is just *one* example. We have thousands of installations doing equally well. Send your trial order now.

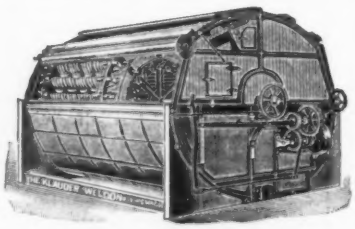
Cling-Surface Co 1051 Niagara St Buffalo N Y

New York Boston Chicago Denver Memphis Etc 64



RAW WOOL AND COTTON MACHINE.

MACHINES
sold on
2 MONTH'S TRIAL
YOU
TAKE
NO
RISK

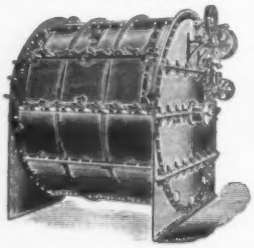


SKEIN AND SLUBBING MACHINE.

KLAUDER-WELDON DYEING MACHINE COMPANY

HUDDERSFIELD, ENGLAND. *AMSTERDAM, N. Y.*

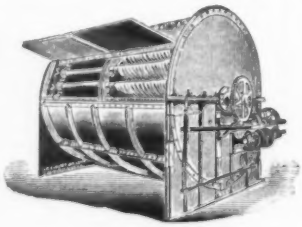
Machines for Dyeing, Bleaching and Scouring Woolen, Worsted, Cotton and Silk Skeins — Slubbing — Raw Cotton and Wool, Waste, Rags, Shoddy, Hosiery, Underwear, Hats, Caps, Knit Cloth, Tapes, etc.



SULPHUR HOSIERY MACHINE.

Special Machines for Sulphur Colors

WILL EARN THEIR COST IN LABOR ALONE
IN FROM
6 TO 12 MONTHS
ACCORDING TO CAPACITY



SULPHUR SKEIN MACHINE.

Buyers' Index

This department is conducted for the benefit of our subscribers. The addresses of builders of mill machinery and dealers in mill supplies, whose names appear in the following classified index, may be found upon referring to their advertisements. The Alphabetical Index to advertisers follows this classified list. Buyers who are unable to find in the classification here given such machinery or supplies as they desire, are invited to communicate with the publishers, who can, in all probability, refer them to proper sources. Advertisers whose names do not appear under headings to which they are entitled will please notify the publishers.

Accountants and Systematizers.
Gunn, Richards & Co.

Air Moistening System.
——See Humidifying Apparatus.

Architects and Mill Engineers.
Cramer, Stuart W.
Dyer, W. E. S.
Ferguson, John W.
Main, Chas. T.
Myrick, J. W. H.
Weston, Robert Spurr.

Asbestos Products.
Johns-Manville Co., H. W.

Asphalt Tanks.
Graver Tank Works, Wm.
Scaife, W. B., & Sons.

Automatic Feeds for Cotton and Wool.
Leigh & Butler.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Saco-Lowell Shops.
Sargent's, C. G., Sons.
Schofield, Wm., Co.
Woonsocket Machine & Press Co.

Baling Presses.
Boomer & Boschert Press Co.
Philadelphia Drying Mchy. Co.

Ball Bearings.
Hess Bright Mfg. Co.
New Departure Mfg. Co.
S. K. F. Ball Bearing Co.

Bandings.
Lambeth Rope Corporation.
Sternberg, Fred, & Co.

Bands, Labels and Tickets.
Acme Print Co.

Baskets.
Lane, W. T., & Bro.

Beams (Steel).
Mossberg, Frank, Co.

Beamers.
Crompton & Knowles Loom Works.

Belting.
Bond, Chas., Co.
Gandy Belting Co.
Graton & Knight Mfg. Co.
Hood, R. H., Co.
——See also Mill Supplies.

Belt Cement.
Graton & Knight Mfg. Co.

Belt Dressing.
Cling-Surface Co.
Dixon, Jos., Crucible Co.
Graton & Knight Mfg. Co.
Stephenson Mfg. Co.

Belt Tighteners.
American Tool & Machine Co.
Dodge Mfg. Co.
Hunter, James, Machine Co.

Bindings.
——See Tapes and Braids.

Bleaching Kiers.
Arlington Mch. Wks.
Birch Bros. (Albert Birch, prop.).
Buhlmann, A. W.
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Philadelphia Drying Machinery Co.
Stearns Lumber Co., A. T.
Textile-Finishing Machinery Co.

Bleaching Materials.
Bosson & Lane.
Electro Bleaching Gas Co.
Marston, John P.
Roessler & Hasslacher Chemical Co.
Seydel Mfg. Co., The.
Worden Chemical Co.

Blowers and Blower Systems.
Autoforce Ventilating System.
Carrier Air Conditioning Co.
Philadelphia Drying Machinery Co.
Sturtevant, B. F., Co.

Bobbins, Spools, Shuttles, Etc.
American Supply Co.
American Textile Specialty Mchy. Co.
Leigh & Butler.
Mossberg, Frank, Co.
Tebbets, E. L., & Co.

Bobbin Winders.
Altemus, J. K.
Lever, Oswald, Co.
Universal Winding Co.

Boilers.
——See Steam Boilers.

Boxes, Box Shooks, Etc.
Pearson, J. T.

Box Tops.
Acme Print Co.

Braiding Machinery.
New England Butt Co.
Textile Machine Works.

Braids.
——See Tapes, Braids and Edgings.

Brass Hinges.
Root, C. J., Co.

Bridges.
Scaife, W. B., & Sons.

Burlers, Speckers, Menders.
Providence Mending Co.

Brushers.
——See Napping Machines.

Brushes.
Cocker, M., & Co.
Felton, S. A., & Son Co.
Mason Brush Works.
Parks & Woolson Machine Co.

Brushing Machines.
Buhlmann, A. W.
Parks & Woolson Machine Co.

Burr Pickers.
Curtis & Marble Machine Co.
Sargent's, C. G., Sons.
Smith & Furbush Machine Co.

Button-Hole Machines.
Reece Button-Hole Machine Co.

Button Sewing Machines.
Union Button Sewing Machine Co.

Calico Printers' Machinery and Supplies.
Arlington Mch. Wks.
Birch Bros., Somerville Machine Wks.
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Lockwood Manufacturing Co., The.
Schwartz, L. H. A., & Co.
Somerville Mach. Wks. (Albert Birch, prop.).
Taunton-New Bedford Copper Co.
Textile-Finishing Machinery Co.
——See also Dyeing, Drying, Bleaching, Machinery, etc.

Canvas Baskets.
Lane, W. T., & Bro.

Cap Spindles.
American Textile Specialty Mchy. Co.

Carbonizing Machinery.
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Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sargent's, C. G., Sons.
Schwartz, L. H. A., & Co.
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Tolhurst Machine Works.

Card Clothing.
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Firth, William, Co.
H. & B. American Machine Co.
Leigh & Butler.
Richards, Atkinson & Haserick.
Riley, C. E., Company.
Schwartz, L. H. A., & Co.

Card Feeds.
——See Automatic Feeds.

Card Grinding Machinery.
Buhlmann, A. W.
Dronsfield Bros.
Entwistle, T. C., Co.
Firth, William, Co.
Leigh & Butler.
Richards, Atkinson & Haserick.
Riley, C. E., Company.
Smith & Furbush Machine Co.

Carpet Machinery.
Altemus, Jacob K.
Crompton & Knowles Loom Works.
Curtis & Marble Machine Co.
Parks & Woolson Machine Co.
Philadelphia Textile Machinery Co.
Smith & Furbush Machine Co.
Textile-Finishing Machinery Co.

Castings.
Dodge Mfg. Co.
Hunter, James, Machine Co.
Lunkenheimer Co., The.
Schofield, Wm., Co.

Caustic Soda.
Wing & Evans.

Cell Driers.
Cell Drier Machine Co.

Cement Pans.
Scaife, W. B., & Sons.

Chain Belts.
Morse Chain Co.
Peerless V Belt Co.

Chemists.
Emerson Laboratory.
Little, Arthur D., Inc.
The Lunkenheimer Co.

Chenille Machinery.
Eppler's, John, Machine Works.

Cling Surface.
Cling-Surface Co.

Clocks.
Pettes & Randall Co.
Watchman's Clock & Supply Co.

Cloth Boards.
Chaffee Bros.
Pearson, J. T.
Richardson Brothers.
Textile-Finishing Machinery Co.

Cloth Cutting Machines.
Firth, William, Co.
Oswego Machine Works.

Cloth Dryers.
——See Drying Machinery.

Cloth Expanders.
American Finishing Machinery Co.
Arlington Mch. Wks.
Birch Bros. Somerville Machine Wks. (Albert Birch, prop.).
Leyland, Thomas, & Co.
Lockwood Manufacturing Co., The.
Somerville Mach. Wks. (Albert Birch, prop.).

Cloth Shrinking Machinery.
Reliance Machine Works.

Cloth Testers.
Firth, William, Co.
Perkins, B. F., & Son, Inc.
Shuttle Machine Co.
Suter, Alfred.

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Cloth Winders.
American Finishing Machinery Co.
Firsching, J. A.
Parks & Woolson Machine Co.

Clutches.
American Tool & Machine Co.
Dodge Mfg. Co.
Hunter, James, Machine Co.

Coal Analysis.
Emerson Laboratory.
Little, A. D., Inc.

Cold Sawing Machine.
Burr & Son, John T.

Combs (Wool and Cotton).
Crompton & Knowles Loom Works.
Firth, William, Co.
Hood, R. H., Company.
Leigh & Butler.
Richards, Atkinson & Haserick.
Riley, C. E., Company.

Commercial Vehicles.
Kissel Motor Car Co.

Compressors (Air).
Allis-Chalmers Mfg. Co.

Condensers.
Allis-Chalmers Mfg. Co.
Dean Bros. Steam Pump Works.

Cones (Paper).
American Textile Specialty Mchy. Co.
Pairpoint Corporation.

Conditioning and Testing.
U. S. Conditioning & Testing Co.

Conveying Systems.
Dodge Mfg. Co.
Sturtevant, B. F., Co.

Coolers (Air).
Power Specialty Co.

Cop Machinery.
Epplers, John, Mach. Works.

Cop Tubes.
American Textile Specialty Mchy. Co.
Pairpoint Corporation.
——See Paper Tubes.

Copper Expansion Joints.
Badger, E. B., & Sons Co.

Copper Print Rollers.
Taunton-New Bedford Copper Co.

Coppersmiths.
Badger, E. B., & Sons Co.
Textile-Finishing Machinery Co.

Copper Work for Dyers.
Badger, E. B., & Sons Co.
Butterworth, H. W., & Sons Co.
Textile-Finishing Machinery Co.

Corduroy and Velvet Cutting Machines.
Firth, William, Co.

Corrugated Iron and Steel.
Scaife, W. B., & Sons.

Cotton.
Riley, C. E., Company.
Schwartz, L. H. A., & Co.

Cotton Dryers.
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Cotton Machinery.
American Textile Specialty Mchy. Co.
Ashworth Bros.
Barber-Colman Co.
Brown Spin-Wright Cotton Co.
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Cramer, Stuart W.
Crompton & Knowles Loom Works.
Curtis & Marble Machine Co.
Dixon Lubricating Saddle Co.
Draper Company.
Easton-Burnham Co.
Elliot & Hall.
Entwistle, T. C., Co.
Fales & Jenks Mch. Co.
Firth, William.
H. & B. American Machine Co.
Klauder-Weldon Dyeing Machine Co.
Leigh & Butler.
Mason Machine Works.
Metallic Drawing Roll Co., The.
Parks & Woolson Machine Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Potter & Johnston Mch. Co.
Richards, Atkinson & Haserick.
Riley, C. E., Company.
Saco-Lowell Shops.
Schwartz, L. H. A., & Co.
Smith & Furbush Machine Co.
Stafford Co., The.
Textile-Finishing Machinery Co.
Textile Machinery Co.
Whitin Machine Works.
Wildman Mfg. Co.
Woonsocket Machine & Press Co.

Cotton Openers and Lappers.
Firth, William, Co.
H. & B. American Machine Co.
Leigh & Butler.
Potter & Johnston Mch. Co.
Richards, Atkinson & Haserick.
Riley, C. E., Company.
Saco-Lowell Shops.

Cotton Softeners.
Bosson & Lane.
Harding & Fancourt, Inc.
Marston, John P.
Seydel Mfg. Co., The.

Cotton Waste Machinery.
Firth, William, Co.
Saco-Lowell Shops.

Counting Machines.
Beck, Chas., Co.
Durant Co., W. N.
Root, C. J., & Co.

Couplings (Flexible-Insulated).
Bond Co., Charles.

Crayons.
American Crayon Co.
Dixon, Jos., Crucible Co.
Lowell Crayon Co.

Cutting Machines.
Artos Engineering Co.
Beck, Chas., Co.
Eastman Machine Co.
Firsching, J. A.
Oswego Machine Works.
Perkins, B. F., & Son, Inc.

Cylinder Oil (Superheated Steam).
Power Specialty Co.

Disinfectants.
Seydel Mfg. Co., The.

Dobbies.
Crompton & Knowles Loom Works.
Stafford Co., The.

Drawing Rolls.
Hood, R. H., Company.
H. & B. American Machine Co.
Metallic Drawing Roll Co., The.

Drying Boards.
Pearson, J. T.
Philadelphia Drying Mchy. Co.

Drying Machinery.
American Tool & Machine Co.
Arlington Mch. Wks.
Bailey, Frank.
Birch, Albert, Somerville Mach. Wks.
Birch Bros., Somerville Machine Wks.
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Cell Drier Machine Co.
Hunter, Jas., Machine Co.
Kenyon, D. R., & Son.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sargent's, C. G., Sons.
Schwartz, L. H. A., & Co.
Somerville Mach. Wks. (Albert Birch, prop.).
Sturtevant, B. F., Co.
Textile-Finishing Machinery Co.
Tolhurst Machine Works.

Dusters.
——See Wool and Waste Dusters.

Dust Collectors.
Firth, Wm.
Philadelphia Drying Machinery Co.
Sturtevant, B. F., Co.

Dyers, Bleachers and Finishers.
Aberfoyle Mfg. Co.
Brophy's, T., Sons.
Davidson, John F.
Globe Dye Works Co.
Home Bleach & Dye Works.
Hopkinson Dyeing & Textile Works.
Lorimer's, The Wm. H., & Sons Co.
National Silk Dyeing Co.
Peerless Co.
Utica Willowvale Bleaching Co.

Dyeing, Drying, Bleaching and Finishing Machinery.
American Finishing Machinery Co.
American Tool & Machine Co.
Arlington Mch. Wks.
Autoforce Ventilating System.
Birch, Albert, Somerville Mach. Wks.
Birch Bros., Somerville Machine Wks.
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Cell Drier Machine Co.
Curtis & Marble Machine Co.
Entwistle, T. C., Co.
Giles, J. H., Dyeing Machine Co.
Heathcote, John, & Son.
Hunt, Rodney, Mach. Co.
Hunter, James, Machine Co.
Hussong Dyeing Machine Co.
Kenyon, D. R., & Son.
Klauder-Weldon Dyeing Machine Co.
Klipstein, A., & Co.
Leigh & Butler.
Leyland, Thos., & Co.
Lockwood Manufacturing Co., The.
National Laundry Machinery Co.
Parks & Woolson Machine Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Pearski Dyeing Machine Co.
Reliance Machine Works.
Schwartz, L. H. A., & Co.
Smith, Drum & Co.
Somerville Mach. Wks. (Albert Birch, prop.).
Sturtevant, B. F., Co. (Drying).
Sucker, G.
Suter, Alfred.
Textile-Finishing Machinery Co.
Tolhurst Machine Works.
U. S. Hoffman Co.

Dye House Cans.
Hill, James, Mfg. Co.

Dye House Trucks.
Bailey, Frank.

Dye Kettles.
Stearns, A. T., Lumber Co.

Dye Sticks.
Bailey, Frank.
Klauder-Weldon Dyeing Machine Co.

Dye Tubs.
——See Tanks, Tubs and Vats.

Dyestuffs and Chemicals.
American Dyewood Co.
Atteaux, F. E., & Co.
Badische Co.
Bayer Co., The, Inc.
Berlin Aniline Works.
Bischoff & Co.
Bosson & Lane.
Cassella Color Co.
Electro Bleaching Gas Co.
Farbwerke-Hoechst Co.
Harding & Fancourt, Inc.
Innis Speiden & Co.
Kalle & Co.
Ford, J. B., Co.
Geisenheimer & Co.
Holliday Read & Sons, Ltd.
Johnson, Chas. A., & Co.
Klipstein, A., & Co.
Leyland, Thos., & Co.
Marston, John P.
Roessler & Hasslacher Chemical Co.
Seydel Mfg. Co.
Stein, Hirsh & Co.
Sykes, Walter F., & Co.
Thayer, Ed M., & Co.
Wing & Evans, Inc.
Wolf, Jacques & Co.
Worden Chemical Co.

Dynamos.
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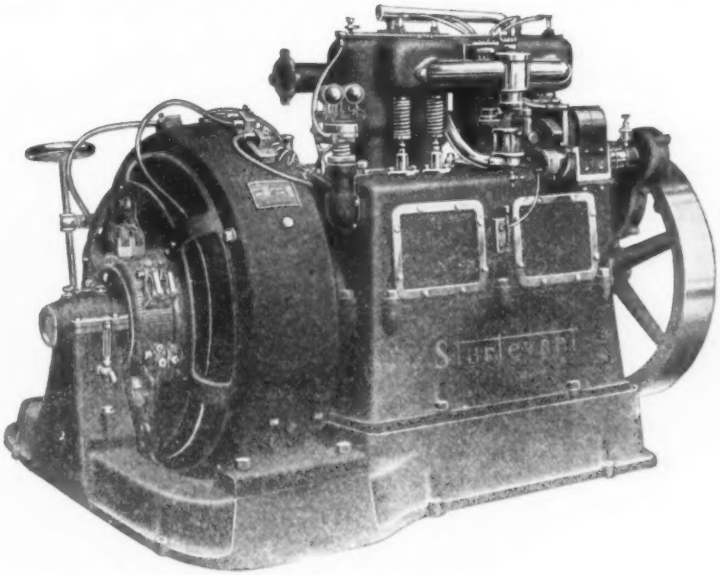
Edgings.
——See Tapes, Braids and Edgings.

Alphabetical Index to Advertisers, with page numbers, follows this list.

A LINE OF

Gasoline Electric Generating Sets That Can Be Depended Upon



Sturtevant Quality

(REG. U. S. PAT. OFF.)

is evident in every part of these outfits and recommends them for your service.

They are simple, compact and self contained, will operate smoothly and quietly under all loads and do not requiring storage battery as equalizer. Speed control is perfect.

¶ They can be installed at small expense in the section of the mill where their output is required without regard to the distance from the main boiler room.

¶ They can be easily started when required and are always ready. There are no stand-by expenses when the machines are idle.

¶ An installation of a STURTEVANT Gasoline Electric Set for suppling night lights and power for overtime work of one or two departments cannot be improved upon. It will form an ever-ready source of power for driving fire pumps and other emergency machines. It will save you money.

¶ A 15 K.W. set is to be installed presently in a large cotton mill in Alabama.

¶ The sets are now built in 5, 10 and 15 K. W. sizes and can be adapted for operation on gasoline, kerosene or illuminating gas as fuel. Generators can be furnished for any voltage, direct current and standard alternating current voltages.

Write for catalog 205-T it will interest you

B. F. Sturtevant Company, HYDE PARK, BOSTON, MASSACHUSETTS and all principal cities of the world

Selling Agents for SANFORD RILEY STOKER COMPANY, Ltd., "The Riley Stoker"

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Allis-Chalmers Mfg. Co.
General Electric Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Electrical Heating Devices.
General Electric Co.

Electrical Supplies.
Johns-Manville Co., H. W.

Electric Driven Pumps.
Allis-Chalmers Mfg. Co.
Dean Bros. Steam Pump Works.
General Electric Co.

Electric Fans.
Allis-Chalmers Mfg. Co.
General Electric Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Electric Hoists.
Allis-Chalmers Mfg. Co.
General Electric Co.

Electric Lighting.
Allis-Chalmers Mfg. Co.
Cooper Hewitt Electric Co.
General Electric Co.
Hinsdill Electric Co.
Johns-Manville Co., H. W.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Electric Motors.
Allis-Chalmers Mfg. Co.
Day, E. B.
General Electric Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Electric Neutralizers.
Chapman Electric Neutralizer Co.

Electrolyzer.
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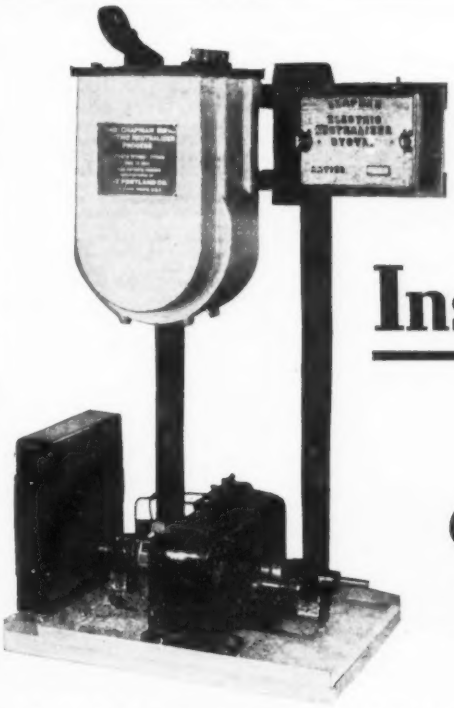

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Stafford & Holt.
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NEARLY all cotton manufacturers would be astonished if they could see the economy that is possible in the sizing of their yarns. Some mills are paying more attention to their sizing as a means of decreasing cost at the slasher, increasing output in the weave room and improving the quality of work.

Recognizing the importance of the subject the *Textile World Record* has borne the expense of publishing an American edition of THE CHEMISTRY AND PRACTICE OF SIZING and now offers to American cotton manufacturers the best ideas of the foremost English textile chemist collaborating with a practical sizer of large experience, written in a practical manner. Their combined work is recognized as standard in all countries where cotton manufacturing is carried on.

Partial Description of Contents.

Chapter I. Substances for Giving Adhesive Properties to the Size.

Chapter II. Materials Used for Giving Weight and Body to the Size and Yarn.

Chapter III. Ingredients Used to Soften the Size and Yarn, Oily and Greasy Substances.

Chapter IV. Soaps—Manufacture of—Analysis of—Use in Sizing.

Chapter V. Deliquescent Substances Used for Softening and for Giving Weight and Strength to the Yarn.

Chapter VI. Ingredient Used for Preserving Size from Mildew.

Chapter VII. Size Mixings, and the Methods and Plant Employed in Mixing Size — Arrangement of Plant Employed in Size Mixing Rooms — Preparation of the Ingredients Previous to Mixing — Method of Mixing the Sizing Ingredients — Size Mixing for Various Weights — Sizing for Native Dyeing — Size Mixing which Cause Tendering — Colors Used for Tinting the Size.

Chapter VIII. Sizing — The Slasher - Creel — Size Box — Cylinders — Headstock — Fans-Wraith — Crooked Beams — Lease Rods — Reducing or Equilibrium Valve — Weighting the Backbeams — The Slasher Tender.

Chapter VIII A. The Practice of Sizing - Medium and Heavy Sizing — Light Weights on "First Beams" — Soft Beams — How to Obtain a Good "Finish" on Yarn Colored Sizing.

Chapter IX. Ball or Warp Sizing. The Tinting of Yarns in the Process of Sizing. Warp Bleaching — Ball Sizing Plant — Sizing Machine - Drying Machine — Balling Machine — Tinting Ball Sized Warps.

Chapter X. Hank Sizing and Bleaching — Hank Sizing — Hank Sizing Plant — Hank Bleaching.

Chapter XI. The Preparation of the Yarn for the Process of Weaving and the Testing of Sized Yarn.

Chapter XII. The Physical and Chemical Properties of Cotton.

Chapter XIII. The Analysis of Sized Grey Cloth — Qualitative Analysis — Quantitative Analysis.

Chapter XIV. Damage to which Sized Cloth is Liable, Mildew and Iron-Stains.

Chapter XV. Bleaching — Faults in Sized Cloth which Cause Damage when Bleached and Finished.

Chapter XVI. The Ventilation of Humidified Weaving Sheds — Weaving — Table of Maximum Limits of Humidity Allowed in Weaving Sheds — Science of Ventilating — Plenum — Humidifying and Cooling Arrangements.

Appendix — Flour Milling — Farina and Dextrin Commercially Considered — New Process of Dyeing.

THE CHEMISTRY AND PRACTICE OF SIZING is a large substantial book of 650 pages, printed on fine coated paper, with numerous illustrations and plates, and bound in cloth. All the mechanical features are of high quality in keeping with a work of its importance.

We do not hesitate in saying that this is the most valuable work of the kind that ever has been offered to American cotton manufacturers. It offers you the best ideas of men with every resource in the form of opportunities, training, experience and personal fitness for the task of improving your sizing.

The price is $10.00, which includes payment of express charges to your address.

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Publisher's Page

Here's to 1914

The publishers of the Textile World Record hope that the year 1914 will be the most successful in your history.

Our business is based on service to the textile trade, and we want to increase the efficiency of that service as much as possible —so call upon us to help you realize our wish that 1914 may be a prosperous year for you, surpassed only by the years to follow.

—÷—

We Thank You

The realization of the fact that we have done our best in 1913 to make good in service, and believing that we have surpassed all previous efforts in this direction is a source of great satisfaction.

More gratifying, however, is the tangible appreciation of these efforts on the part of the textile trade as evidenced by the following figures:

In 1913 the demand made it necessary for us to print over 75,400 copies of the Textile World Record, an average of more than 6,283 copies a month—and twice during the year the edition was exhausted, forcing us to advertise for copies for our files.

Each month we printed over 400 advertisements, a total of about 1,700 pages of paid advertising, averaging nearly 140 full pages per issue.

For all this we thank our subscribers and advertisers.

Present indications are that even this record in subscriptions and advertising will be exceeded in 1914. It certainly will be if we all take an optimistic view of things, realizing that we can make business better if we will, and that the expression of pessimistic feelings has a tendency to hurt business; that the right attitude to assume is that business is going to be better, and to advertise to make it better, with the assurance that there are orders for those who will go after them with the right attitude.

The new tariff puts, not only the textile manufacturers, but the machinery builders of the country on a competitive basis with the world and they are confronted with novel conditions, which will need our best skill, energy and courage to meet and overcome. However much we may dislike these new conditions, we cannot get away from them for some years and we believe that American manufacturers and business men will do everything in their power to meet the situation. Mills in all lines are overhauling their plants and much new equipment is being installed to replace old so as to reduce costs. This means that there is business to be had for the optimistic and progressive concerns who are seeking for it.

Merely as a straw indicating the drift of things, we mention a case of one of the Textile World Record's advertisers who has for years run a single page ad and who begins this month with two pages each issue. Another advertiser (at the other extreme in size) who has been running a 1/8 page advertisement begins in this issue with 1/4 page, both evidently being impressed with the fact that there is more business to be had if they exert themselves to get it.

This is the sort of aggressiveness that wins more business.

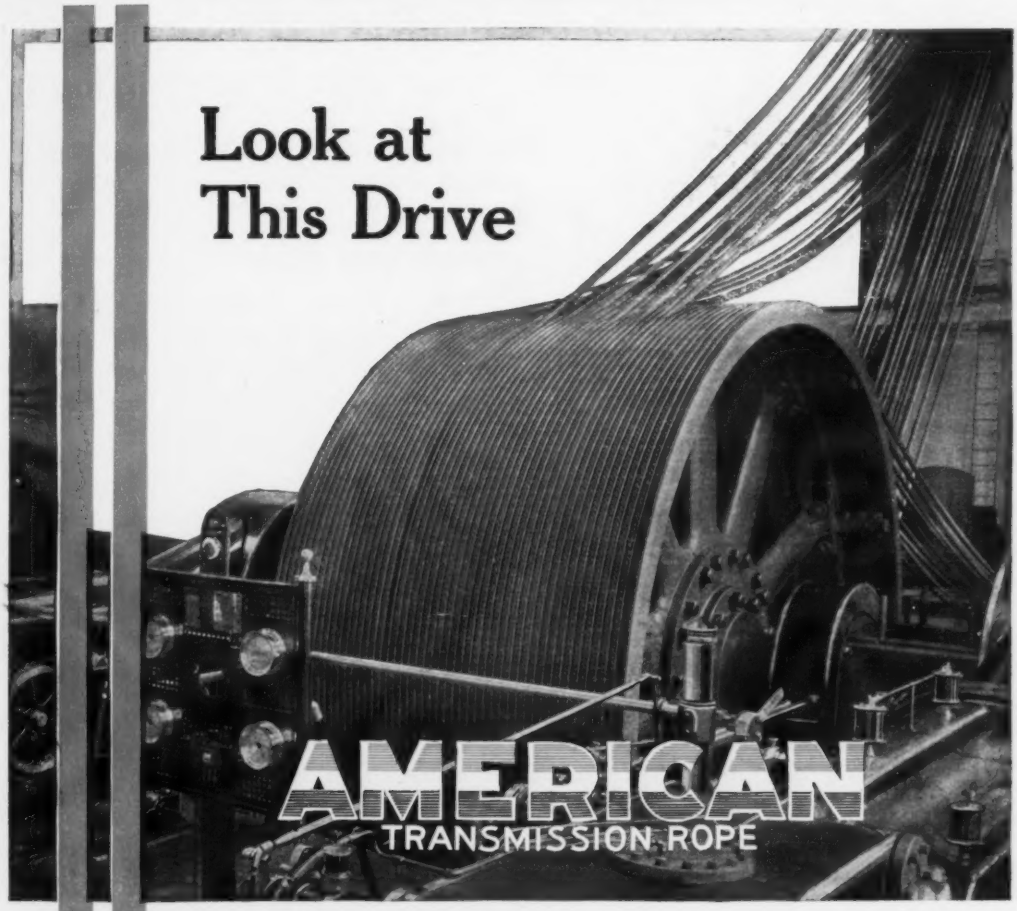
Of course sometimes getting more orders does not mean that more business was created. Frequently it means the taking of business from competitors who have falsely concluded that "there is no business, so what is the use of spending money to find it"—and the man who has the order to place gives it to the optimistic advertiser who kept gunning for it.

If there is any moral in this, it is: Keep on gunning for business—even when there is no game in sight—it may be just around the corner.

—÷—

Monthly Circulation Statement

Of this edition 6,250 copies are printed and all are needed.



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You are constantly looking for ideas, suggestions that will enable *you* to get cheaper efficiency from your power plant.

If you can get *more power*, and *cheaper*—you want it.

Look at this drive—It shows one sure way to reduce power-waste and increase power-efficiency. Use Rope-Driving—and *American Transmission Rope.*

The practical engineers who installed this system chose *American Transmission Rope*, because they knew it would deliver *the maximum of power at the minimum operating cost.* You know what this means to you—in results. Why not look into this matter—today?

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QUALITY

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St. Louis, Missouri

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There's a Kron Scale made to fit the requirements of *your* mill or factory. This new catalogue shows just how it looks and tells exactly what it will do.

It will suggest to you a way of saving *hundreds* or possibly *thousands* of dollars each year. It will show you how to get the *exact* weight *every* time—and in the least time.

Meantime, while you are waiting for your catalogue, consider these facts:
A Kron Scale weighs in less than one-third the time required by the old beam scale—you just "Load and Look," no time is required fumbling with weights and poise—you can weigh 10 lbs. and 500 lbs. one right after the other. The Kron Scale is the chosen scale of big express companies, railroads, packers and industrial plants, because it is accurate and quick under the hardest daily usage.

The movement of the pointer on this scale is automatically controlled by a compressed air device. Dial mechanism is entirely free from knife-edges, pivots and springs. All materials used are of the best grade, carefully selected. The Kron is built throughout for long, efficient service.

You are urged to send for your catalogue *today*.

You cannot begin too soon to stop wasteful weighing and possible short-weights or over-weights.

Write today.

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for automatic deduction of tare, so that only the net weight is shown on the dial.

American Kron Scale Company
39 Cortlandt Street, New York

Western Representative—
Spencer Otis Company
Railway Exchange Bldg.
Chicago, Ill.

J. W. Williamson has resigned as secretary and treasurer of the Delgado Mills, Wilmington, N. C., and will devote all of his time to the Bellwill Mills of the same place.

J. H. McDowell has accepted the position of superintendent at the Wadesboro Cotton Mills, Wadesboro, N. C. He was formerly employed in a similar position at the Sanders Spinning Co., Bessemer City, N. C.

Benjamin Hetherington, for the past four years overseer of weaving at the Lincoln Mill, Fall River, Mass., has severed his connection with that company.

D. S. Knight has accepted the position of overseer of weaving at the Waucantuck Mill, Uxbridge, Mass. He was formerly employed at the C. J. Amidon & Son's Mill, Wilton, N. H.

Charles E. Brady, overseer of carding at the Nonquit Spinning Co., New Bedford, Mass., has resigned to accept a similar position with the Lincoln Manufacturing Co., Fall River, Mass., to succeed Frank C. Leary, who has been appointed superintendent of that mill.

John Hartley, overseer of carding at the Windham Manufacturing Co., South Windham, Me., has severed his connection with that company.

George Cooper has accepted the position of overseer of knitting at the Child's Welfare Garment Co., Chicago, Ill. He comes from Cambridge Springs, Pa.

G. R. Shevill, who has successfully filled the position of superintendent for Louis Metzger, Broadway and Bleecker Sts., New York City, has resigned his position on account of ill health. Mr. Shevill is considered one of the best authorities on all kinds of latch knitting machines.

Michael Gerson, formerly in charge of Espen, Loeb & Co., Philadelphia, Pa., will take charge of the knitting, braiding and novelty departments of the reorganized firm of Louis Metzger & Co., New York City.

J. M. Jordan has been appointed superintendent of the Paulding County Cotton Mill, Dallas, Ga.

W. M. Johnson has accepted the position of superintendent of the cotton department of the Atlanta Woolen Mills, Atlanta, Ga.

T. M. Lumley has accepted the position of overseer of spinning at the Hannah Pickett Mills, Rockingham, N. C. He was formerly employed at the Marlboro Mill No. 3, McColl, S. C.

E. L. Goble has accepted the position of overseer of carding at the Valley Creek Cotton Mills, Selma, Ala. He comes from China Grove, N. C.

S. V. Upchurch, superintendent of the Alpine Mills, Morganton, N. C., has resigned to become connected with a new hosiery yarn mill which is to be built at Valdese, N. C.

Walter N. Gallant has been appointed agent of the Newmarket Manufacturing Co., Newmarket, N. H., succeeding George E. Spofford.

Harry K. Drew, formerly superintendent of the Clinton Manufacturing Co., B. B. & R. Knight, Woonsocket, R. I., has accepted a similar position with the Union Cotton Mill, Union, S. C.

James H. Gannon has reentered the employ of the Faulkner Manufacturing Co., North Billerica, Mass., as overseer of finishing. He comes from Proctorsville, Vt.

A. Morrison, overseer of weaving at the Great Falls Woolen Co., Somersworth, N. H., has resigned his position with that company.

David Rennie, overseer of dressing at the Ashtabula Worsted Mill, Ashtabula, O., has severed his connection with that company.

Edward H. Heine, overseer of weaving at the Waucantuck Mill, Uxbridge, Mass., has severed his connection with that company.

Richard T. Mills has accepted the position of second hand of spinning at the Berkeley Co., Berkeley, R. I. He was formerly employed at the Dominion Textile Co., Montreal, Canada.

J. E. Wood, superintendent of the Wottoquottoc Worsted Co., Hudson, Mass., has severed his connection with that company. He is succeeded by Thomas Harrison.

John Duff has been elected president of the Soule Mill, New Bedford, Mass., succeeding William M. Butler, who has resigned.

James Airy, who has held the position of designer at the Eagle & Phenix Mills, Columbus, Ga., has been promoted to general overseer of all the weaving in those mills. He comes from Alta Vista, Va.

W. W. Holly has accepted the position of overseer of the cloth room at the Wylie Manufacturing Co., Chester, S. C., to succeed George M. Powell.

W. L. Stephens has accepted the position of overseer of weaving at the Valley Creek Mills, Selma, Ala. He comes from Siluria, Ala.

W. A. Marley has accepted the position of overseer of spinning at the Avon Mills, Gastonia, N. C. He comes from Hudson, N. C.

J. A. Smith has accepted the position of overseer of spinning at the Union Mills, LaFayette, Ga. Hecomes from Atlanta, Ga.

J. C. Keller has been appointed superintendent of the Johnston Manufacturing Co., Charlotte, N. C. He comes from Concord, N. C.

C. S. Cozart has been appointed assistant superintendent of the Longhurst Cotton Mills, Roxboro, N. C. He was formerly employed at the New Century Cotton Mills, South Boston, Va.

M. V. Talley has been appointed superintendent of the South Texas Cotton Mills, Brenham, Tex.

C. E. Sharp has been promoted from second hand to overseer of carding at the Pomona Mills, Greensboro, N. C.

L. J. Brown has accepted the position of overseer of spinning at the Pomona Mills, Greensboro, N. C. He comes from Kannapolis, N. C.

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Design of Special Plants
Reducing Cost of Processes
Control of Supplies
Elimination of Wastes

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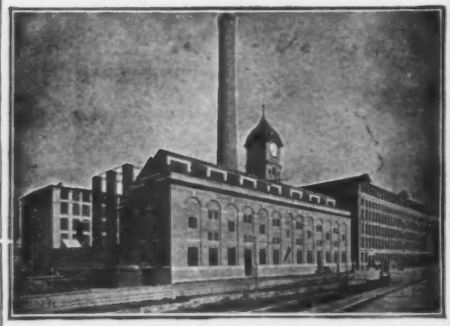

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Plans and Specifications for the erection, equipment, or reorganization of Textile Mills, and other Industrial Plants, including Steam and Water Power Plants.
Specialist and Expert
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Examination of manufacturing properties with special reference to their value. 4-11

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Soap maker wanted, man who thoroughly understands the making of boiled soaps for textile trade. Must be capable of taking complete charge of plant. Excellent opportunity. State full particulars as to experience and furnish references. Address "Soap Maker," Textile World Record, Boston, Mass.

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Soaps of Quality, Turkey Red Oil, Tuscan Softener, Soluble Oils and Olive Oil

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CHEMIST—assistant—desires position with a textile house in New York City—good technical education—start at anything—moderate salary.

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Its subscribers buy about $250,000,000 worth of textile machinery, equipment, and supplies (not including raw material) each year.

Being so successful for new machinery it should also prove profitable for the advertising of second-hand machinery, and for the sale of anything of special interest to men in the mill who are held responsible for results, e. g., mills, power-plant equipment, supplies, etc.

Therefore, if you have any textile machinery, mill or power-plant equipment that you do not intend to use again, the Textile World Record offers you the best market for its disposal at a fair price. An advertisement this size costs only $16.00 an issue. For further information address:

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Manufacturers who are in need of Superintendents or Overseers for any department of mill work may learn of suitable men upon application by mail or telephone to C. T. DONLEVY, care Textile World Record, 144 Congress Street, Boston., who will give prompt attention to their requirements without charge.

Overseer of Cloth Room in cotton mill; has worked on sateens, both warp and filling, lawns, sheetings, shirtings, prints and a great variety of converted goods of all widths, weights and constructions, both combed and carded; familiar with hydraulic and screw presses, Curtis & Marble and Elliot & Hall folders, also Curtis & Marble and Lowell shears; 41 years of age, married; will not go to Vt., Pa., N. Y., N. J., West, South or to Canada; good reference.
6085, Textile World Record, Boston, Mass.

Assistant Superintendent or shipping clerk in woolen mill; has worked on kerseys, meltons, broadcloths, venetians and carriage linings; familiar with all makes of machinery used in making above class of goods; has worked in all departments of a woolen mill; 26 years of age; will not go to Pa., N. Y., N. J., West, South or Canada; good reference.
6086, Textile World Record, Boston, Mass.

Overseer of Weaving in woolen mill; has worked on fancy woolens and worsteds; prefers Knowles looms; 45 years of age, married; will go to Mass., R. I., and Conn.; has one boy in finishing room; good reference.
6087, Textile World Record, Boston, Mass.

Overseer of worsted scouring, carding or combing; has worked on all classes of wool, foreign and domestic; familiar with James Smith, Textile Machinery Co., Platt, Taylor & Wadsworth cards; Crompton & Knowles, Smith & Sons, Noble, Taylor & Wadsworth combs, also James Hunter scouring machines; 27 years of age, married; will not go to Me., South or Canada; good reference.
6088, Textile World Record, Boston, Mass.

Superintendent in Bleachery, or overseer of bleaching; has worked on cotton piece goods, skein yarn, hosiery and Turkish toweling; familiar with all makes of bleaching machinery; 30 years of age, married; will not go to Canada; good reference.
6089, Textile World Record, Boston, Mass.

Weave Room Office Bookkeeper; has worked on half woolen and fine all wool dress goods and broadcloths; familiar with German looms; 21 years of age; good reference.
6090, Textile World Record, Boston, Mass.

Overseer of Finishing in woolen mill; has worked on all grades of woolens, worsteds and face finished goods; familiar with English, German and American machines; 30 years of age, married; will not go South or to Canada; good reference.
6091, Textile World Record, Boston, Mass.

Overseer of Cloth Room in cotton mill; has worked on coarse and fine goods from 28s warp and 80s warp; 10s to 120s filling, also silk filled goods; familiar with all kinds of cloth room machinery; 40 years of age, married; will not go West, South or to Canada; good reference.
6092, Textile World Record, Boston, Mass.

Superintendent or assistant of woolen or worsted mill; has worked on woolens, worsteds, silks and cotton worsteds; familiar with American and English machinery; will not go West, South or to Canada; 41 years of age, married; good reference.
6093, Textile World Record, Boston, Mass.

Loom Fixer or overseer of weaving in woolen mill; has worked on woolen dress goods, broadcloths, flannels, and fancy cassimeres; familiar with Knowles looms; 50 years of age, married; will not go to Pa., N. Y., N. J., West, South or Canada; good reference.
6096, Textile World Record, Boston, Mass.

Overseer of Woolen Carding; has worked on all classes of goods and yarns; 29 years of experience as a woolen carder; 48 years of age, married; good reference.
6095, Textile World Record, Boston, Mass.

Overseer of Knitting or sewing machine adjuster; has worked on full fashioned sweaters, also cut goods; familiar with all flat beds, Stafford & Holt, and Leighton circular knitting machines; Union Special, Metropolitan, Merrow, Singer, Reece button-hole, Union button and National button sewing machines; 26 years of age, married; good reference.
6097, Textile World Record, Boston, Mass.

Assistant Manager or manager in sample department in woolen mill; would also accept position of overseer of weaving; graduate of textile school in Germany; employed for nine years in leading German factories as producer of new qualities and exclusive sample collections of most varied materials in ladies' and men's novelties; 32 years of age; married; German; good reference.
6098, Textile World Record, Boston, Mass.

Agent or superintendent of mill on yarn or absorbent cotton; has worked on yarns, carded and combed peeler and Egyptian and combed Sea Island, also all grades of absorbent cotton; familiar with Whitin, Lowel, Pettee, and Hetherington machines; 31 years of age, married; good reference.
5991, Textile World Record, Boston, Mass.

First Class Loom Fixer, or overseer of weaving in small woolen mill; has worked on fancy woolens and worsteds; familiar with Knowles looms; 26 years of age; will not go to Me. or South; R. I. preferred; good reference.
6100, Textile World Record, Boston, Mass.

Overseer of Carding in woolen mill or second hand; has worked on all kinds of woolen goods; familiar with Davis & Furber, Furbush, and Taintor cards; 48 years of age, married; will not go West, South or to Canada; good reference.
6101, Textile World Record, Boston, Mass

Superintendent of Hosiery Mill; has worked on all grades of seamless hosiery, wool, worsted, cotton and silk; expert in handling fiber silk; familiar with all makes of machinery; is a designer of machinery; has invented methods and machines for making goods; 37 years of age, married; good reference.
6102, Textile World Record, Boston, Mass.

Overseer of Finishing in knitting mill or superintendent of small mill; has worked on men's and children's union suits, shirts and drawers in cotton, mercerized, lisle, worsted, silk and all wool; familiar with Reece, Singer, button hole, Union button, triple interlock, Union Special, in fact all kinds of sewing machines, electric motors, washing and drying machinery; 42 years of age, married; good reference.
6103, Textile World Record, Boston, Mass.

Overseer of Weaving in cotton mill; has worked on sateens, sheetings, shirtings, twills, drills, duck of all kinds, checks, plaids, ginghams, flannels, colored cotton goods; white, plain and fancy cotton goods; fine work as well as coarse; familiar with all makes of machinery; 47 years of age, married; good reference.
6044, Textile World Record, Boston, Mass.

Overseer of Carding in woolen or worsted mill, or carding and spinning; would also consider position of superintendent of woolen mill or felt mill; 51 years of age, married; has worked on all kinds of goods and familiar with all makes of machinery; good reference.
5977, Textile World Record, Boston, Mass.

Designer, assistant superintendent or overseer of weaving in woolen mill; has worked on woolens and worsteds for men's and ladies' wear, overcoatings and dress goods; worsted counts of yarns from 2/20s to 2/60s; familiar with Crompton & Knowles, jacquard looms, etc., Universal winding machines, also finishing machinery; 25 years of age; good reference.
5978, Textile World Record, Boston, Mass.

Overseer of worsted yarn department; would accept position of overseer of spinning; has worked on fine botany and carpets; familiar with Prince, Smith, Hall & Stell, Farrar, Boyd, Collins, etc.; 34 years of age, married; good reference.
5979, Textile World Record, Boston, Mass.

Superintendent of cotton mill or would accept good boss carding position; has worked on about everything made from yarns between 8s to 150s; familiar with all makes of machinery; 39 years of age, married; good reference.
5980, Textile World Record, Boston, Mass.

Designer in Cotton Mill or will consider any position where there is a chance for advancement; has worked on fine goods and fancies; familiar with Potter & Johnson cards and pickers; Kitson pickers; Howard & Bullough cards and spinning frames; Whitin & Nasmith combers; Howard & Bullough and Woonsocket speeders; Fales & Jenks spinning and twisting machines; Draper, Stafford, Whitin, Mason, Crompton & Knowles, Gem pick and pick, also jacquard machines; good reference.
5981, Textile World Record, Boston, Mass.

Overseer of Carding and spinning in woolen mill; has worked on all kinds of goods; 31 years of age, married; will not go West, South or to Canada; good reference.
5970, Textile World Record, Boston, Mass.

Overseer of twisting, warping, spooling, winding, slashing and quilling in cotton mill; has worked on sewing thread, hosiery yarn, tire fabrics, all kinds of cotton yarns from Nos. 1 to 190, from 2 up to 20 ply; familiar with Fales & Jenks, Howard & Bullough, Whitin and Lowell machines; 31 years of age, married; will go to Mass., R. I., and Conn.; good reference.
5982, Textile World Record, Boston, Mass

Overseer of Bleaching, mercerizing or aniline black dyer in bleachery; has worked on all kinds of cotton piece goods, lime and caustic bleaching, also colors and wash dress goods; familiar with all kinds of bleaching, mercerizing and dyeing machinery; 40 years of age; good reference.
6031, Textile World Record, Boston, Mass.

Second Hand of Spinning in cotton mill; has worked on cotton yarn 1s to 80s and two ply; familiar with Dobson & Barlow, also Howard & Bullough machines; 27 years of age; good reference.
6059, Textile World Record, Boston, Mass.

Second Hand of Carding in woolen mill; has worked on blankets, fancy woolens, men's wear, dress goods, carriage cloths, kerseys, cassimeres and mohair goods; familiar with Davis & Furber, Lombard and Smith cards; 25 years of age; good reference.
6060, Textile World Record, Boston, Mass.

Overseer of Dyeing in woolen mill, or assistant dyer in large mill; has worked on cotton and worsted yarns, fancy dress goods, serges, raw wool, slubbing and carpet yarns; familiar with all kinds of dye kettles and vats; 24 years of age, married; will not go West, South or to Canada; good reference.
6061, Textile World Record, Boston, Mass.

Loom Fixer or small boss weaving position in woolen mill; has worked on woolen and worsted goods; familiar with Crompton & Knowles looms; 40 years of age; will not go to Mass., West, South, or Canada; good reference.
6062, Textile World Record. Boston, Mass.

Grinder or Second Hand of cotton card room; has worked on American cotton; familiar with Dobson & Barlow machines; 23 years of age; will not go to N. H., Vt., Pa., N. J., West, South or to Canada; good reference.
6063, Textile World Record, Boston, Mass.

Superintendent, Overseer of Finishing or sewing machine adjuster; has worked on light and heavy weight underwear, very fine spring needle, in fact, all kinds; familiar with Union Special, Merrow, Singer, Industrial, Wheeler & Wilson, Willcox & Gibbs, Standard, Arnold machines, most every style and class; 24 years of age, married; good reference.
6064, Textile World Record, Boston, Mass.

Superintendent of Shoddy Plant; would consider position as superintendent of woolen yarn mill, or traveling salesman; has made yarns and shoddies, also about everything in woolen line; good knowledge of woolen manufacturing, also knitting; familiar with all kinds of machinery; 47 years of age, married; will not go West, South or to Canada; good reference.
6068, Textile World Record, Boston, Mass.

Overseer of Carding or second hand in cotton mill; has worked on all kinds of goods; familiar with all makes of modern machinery; 31 years of age, married; good reference.
6065, Textile World Record, Boston, Mass.

Overseer of Weaving or good fixing position; has worked on woolens, worsteds and shoe cloth; familiar with Crompton & Knowles, Crompton & Thayer, also Knowles side cam looms; 34 years of age, married; good reference.
6066, Textile World Record, Boston, Mass.

Overseer of Knitting in underwear or hosiery mill; has worked on both heavy and light goods; 20 years of experience on both spring and latch needle; familiar with most all makes of machinery; 40 years of age, married; prefers Canada or Southern States; good reference.
6067, Textile World Record, Boston, Mass.

Overseer of Finishing in knitting mill or sewing machine fixer; has worked on men's, ladies' and boys' union suits; has made some shirts and drawers; familiar with Union Special, Singer, Union, Metropolitan, Merrow, National, Button-Hole and Standard machines; 27 years of age, married; good reference.
6075, Textile World Record, Boston, Mass.

Overseer of Finishing in woolen mill; has worked on all classes of woolen and worsted goods; 40 years of age; will not go to Pa., South or Canada; good reference.
6076, Textile World Record, Boston, Mass.

General Manager of Hosiery Mill; has worked on misses' ribbed mercerized hosiery; familiar with Brinton & Wildman ribbers; Excelsior, Hemphill and Banner knitters; 50 years of age, married; will not go to Canada; good reference.
6077, Textile World Record, Boston, Mass.

Overseer of Knitting or charge of machinery; has worked on jerseys, sweater coats, shaker sweaters, bathing suits, theatrical, gymnastic knit goods; cotton, wool, worsted and silk, in fact all kinds of knitted goods; familiar with all makes of machinery used in their manufacture; 41 years of age, married; will not go to Me., N. H., or Vt.; good reference.
5983, Textile World Record, Boston, Mass.

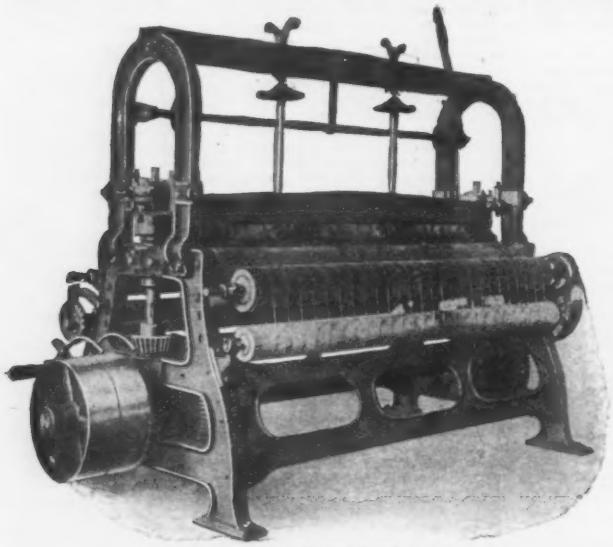
Agent of Cotton Mill or superintendent; has worked on plain sateens, twills, pillow tubings, lenos, Bedford cords, etc.; familiar with English and American makes of machinery; 49 years of age, married; good reference.
5984, Textile World Record, Boston, Mass.

Superintendent or general manager of underwear mill; has worked on ribbed underwear in two pieces and unions for men, women and children; familiar with all makes but has no mechanical ability; 35 years of age, married; good reference.
5988, Textile World Record, Boston, Mass.

Overseer of Dyeing in woolen mill; has worked on all classes of goods; familiar with all makes of dyeing machinery; 37 years of age, married; good reference.
5989, Textile World Record, Boston, Mass.

Second Hand or overseer of woolen carding; has worked on all kinds of stock; familiar with all kinds of woolen cards, also garnett rag pickers, etc.; good reference; 30 years of age.
5990, Textile World Record, Boston, Mass.

CHINCHILLA MACHINE



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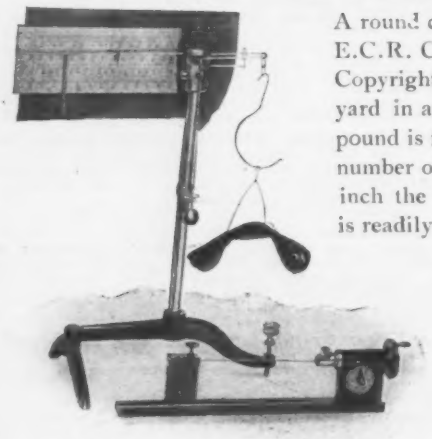


Universal Yarn Balance and Pocket Twist Tester

A round cut of 1/400 part of a square yard is made on the E.C.R. Cutter and by means of the Balance and SUTER'S Copyrighted Tables the weight of the cloth in ounces per yard in any width or the yardage per pound is found at once. Knowing the number of picks and warp threads per inch the "Average number of yarn" is readily obtained.

The yarn numbers of linen, woolen, worsted, cotton and silk yarns are obtained on the Universal Balance and the number of twists per inch in the yarn are given by the Pocket Twist Tester.

E. C. R. Cutter

MILL NEWS

North Carolina, Hendersonville. R. P. Freeze, W. M. Bacon, J. B. Morris and J. F. Freeze, all of this place, have organized the Freeze-Bacon Hosiery Mills with capital stock of $50,000. R. P. Freeze is president, treasurer and buyer; and J. B. Morris is superintendent. The new company succeeds the Freeze Hosiery Mills and will continue the manufacture of seamless hosiery, adding new lines and enlarging the production.

*North Carolina, Statesville. The enlargement and improvements recently completed by the Bradford Knitting Mill, Inc., increased the equipment from 75 latch needle knitting machines to 125 latch needle knitting machines, and from 10 loopers to 16 loopers. They manufacture men's and women's seamless hosiery from carded and combed yarns, either single sole or high heel and double sole, 176, 200 and 220-needle goods. There is no change in the management.

Pennsylvania, Philadelphia. William S. Lloyd, proprietor of the Stratford Knitting Mills, Wayne Junction, is reported to be purchasing machinery to increase the capacity of his plant. The product, which consists of women's and children's underwear, is sold ahead for several months. The report that Mr. Lloyd was about to sell the Stratford Knitting Mills is denied and it probably grew out of the fact that he is receiver for the American Metal Stamping Company.

Pennsylvania, Philadelphia. The Nuidea Knitting Company, of which John L. Sutphen is the proprietor and buyer, has been removed to larger quarters at 2709 N. Palethorp St., where in addition to operating 8 knitters on silk neckties, Mr. Sutphen is arranging to install 20 knitting machines, 2 ribbers and three loopers, which he will operate on men's silk plain and plaited hosiery, which he will finish and sell direct.

Pennsylvania, Philadelphia. The large new building being erected for the Pennsylvania Knitting Mills, now at 1010 to 1014 Race Sts., located at 16th and Callow Hill Sts., is nearing completion, the company expecting to remove their plant to the new location some time during the early spring. The new building is 6 stories in height, built throughout of concrete, 100 by 180 feet, with light on all sides and equipped throughout with all the latest modern appliances in the way of lighting, heating, fire and sanitary arrangements. They will occupy almost the entire building, enlarging their equipment on which they manufacture cardigan jackets, coat sweaters, shaker sweaters, mufflers and fancy knit goods.

Pennsylvania, York. A brick addition is being built to the power house of Joseph Black & Sons Company. It is reported that increases are to be made in the equipment throughout the plant. Seamless and full fashioned half hose and infants' and children's hosiery are manufactured. Walter and Joseph Black are the buyers.

New York, New York City. Max Mayer & Sons Company, manufacturers of sweater coats at 569 Broadway, will move to larger quarters at 894 Broadway.

New York, New York City. A line of jersey bathing suits is being added to the products of the New York Knitting Mills, 141 Wooster St.

*North Carolina, Wendell. At a meeting of the stockholders of the new Wendell Knitting Mills Company, recently held, it was decided to increase the capital stock from $20,000 to $40,000, the new capital to be used in adding 50 or more knitting machines and building additional houses for operatives. The original mill building is large enough to take care of the additional machinery. Seamless hosiery is manufactured. R. B. Whitley, owner of the Whitley Mfg. Co., is president of the Wendell Knitting Mills Company; M. A. Griffin is vice-president; O. L. Rowland, secretary and treasurer; J. L. Holman, superintendent.

Pennsylvania, Philadelphia. The Victor Hosiery Mills, manufacturers of knitted neckwear, are now located at 22nd and Glenwood Ave., where they occupy a large two-story brick building. The equipment of the plant has been increased to 15 knitters and lines of mufflers and cut neckwear have also been added to their production. E. R. Dilmore is proprietor and W. R. Dilmore, manager.

Pennsylvania, Plymouth. Soon after the first of the year the contract will be let for the erection of a new mill for M. J. Atwood Co., silk throwsters. Plans and specifications have been prepared by Lewis Hancock, of Scranton, and call for a building, 250 feet long and 50 feet wide. The building will be of brick, of regular mill construction. Eleven thousand spindles are operated at present throwing organzine and tram.

*Pennsylvania, Vera Cruz. The addition recently built by the Vera Cruz Silk Company has been equipped with looms and the plant is running to full capacity.

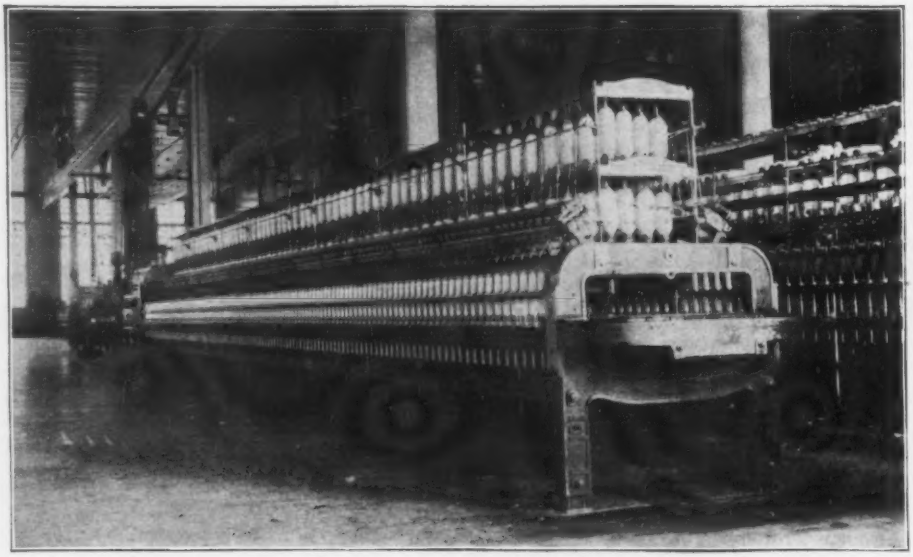
*New Jersey, Paterson. Particulars of the Hawthorne Silk Company, organized by sons of Dwight Ashley, Sr., and others, to take over and operate the Hawthorne Silk Mill, Paterson, and the former Ashley & Bailey plant at Fayetteville, N. C., are as follows: The new company has capital stock of $150,000. Charles E. Ashley is president and buyer; William W. Cook, treasurer; and William L. Pross, superintendent of manufacturing. The lines manufactured in these plants previously, consisting of plain and fancy dress goods and tie silks will be made. The new concern has equipment of 243 looms at Paterson and 364 looms at Fayetteville. The Fayetteville plant also contains 15,000 spindles. The Forest Silk Company, whose incorporation was recently noted at Paterson, is a selling concern only and will distribute the products of the Hawthorne Silk Company and other accounts that can be secured.

New Jersey, Paterson. Josiah Bailey has repurchased a part of the Riverside plant of Ashley & Bailey Company which was sold last October to Melvin G. Palliser, an attorney. Mr. Bailey will manufacture ribbons and broad silks. According to report it will be necessary to install a large amount of new machinery in the plant.

THE BROWN SPIN-WRIGHT

Commercial Frame

As Operated Successfully in a Large Mill



For Particulars Address

The Brown Spin-Wright Cotton Co.

32 Union Square, New York, N. Y.

*Pennsylvania, Northumberland. The branch plant of the Susquehanna Silk Mills of Sunbury will begin manufacturing in January making silk and silk mixed goods with 100 looms. W. H. Drumm is to be superintendent.

Pennsylvania, York. The Souter Throwing Company, operating a small plant for the throwing of silk, have shut down their equipment temporarily. It is probable that it may be started up again within a short time.

Kentucky, Louisville. Henry Davis, formerly with D. Davis & Sons, wholesale dealers in wool and hides, of this city, has organized a new concern under the name of H. Davis & Company and started a cotton felt and mattress factory at 1507 Pirtle St. A 2-story building, 40 by 120 feet, has been equipped with three pickers, electric motors and other machinery.

*Maine, Castine. The plant of the Castine Line & Twine Company, burned several months ago, has been rebuilt. Five thousand dollars was raised in Castine to aid the company in rebuilding and exemption from taxation for a period of years was granted. Fishing lines for deep sea fishing are manufactured.

Massachusetts, Lowell. New additions are being made to the Waterhead Mills, Inc., and a boiler house and new coal pocket are being built. This concern carries on a business of converting, dyeing and finishing corduroys and velveteens.

Minnesota, Duluth. The Western Rug Company, reported incorporated in August with capital stock of $250,000, succeeds the Western Spinning Company which operated a plant on linen yarns, towels, and crashes consisting of 1,000 ring spindles and 20 looms, bleaching and finishing plant, etc. The Western Spinning Company was a comparatively new concern organized within a year or two and succeeded the Western Linen Company. The same interests have remained in control throughout these changes. A new plant is being built at 63rd Ave., West, and Grand Ave., which will occupy a space 146 feet square, and will consist of 2 buildings, one of which will be 146 by 86 feet, 3 stories high, and the other 146 by 60 feet, 1 story high. Reinforced concrete is being used. It is proposed to have the new plant ready for use at an early date and probably the manufacture of rugs will be added. E. H. Smith is the manager and buyer.

Missouri, St. Louis. A $5,000 brick addition is to be built to the plant of the St. Louis Cordage Mills, 1710 S. 11th St.

*New Jersey, Dundee Lake. The local plant of the National Silk Dyeing Company, which is devoted to piece dyeing and printing, is being enlarged by the Pettit Construction Company.

New Jersey, East Rutherford. The Georgian Textile Mills, Inc., are building an addition. Cotton plush is manufactured. The New York office is at 215 Fourth Ave., George Schmiedel, president and buyer.

*New Jersey, Paterson. The American Ribbon Finishing Co., a new corporation which has taken over the business of Schellenberg & Holder, silk finishers, has moved the plant to the Ball Mill, Montgomery and Summer Sts., and is doing finishing and watering of ribbons and narrow fabrics of all kinds. John J. Holder is treasurer and buyer.

New Jersey, Paterson. Cramer & King Company will build a large addition to their plant on E. 33d St. The plans call for a 1-story brick building, 250 by 500 feet, to be used for finishing. Cramer & King are silk printers, dyers, and finishers.

New Jersey, Pluckamin. In the past few months the equipment of the Superior Thread & Yarn Company has been increased to four combs and 3,500 spindles. Ramie yarns of all sizes in skeins and on tubes and on cones are manufactured. J. W. Hiltman is president; R. E. Boller, secretary; W. W. Caswell, New York, treasurer and buyer, and George Duncan, superintendent. The New York office is at 45 East 17th St.

*New Jersey, Somerville. The additional mill for the Redfern Lace Works, for which plans were recently made, will be built in the early spring. Considerable new equipment will be added. The new building will be one story high, 100 by 200 feet, of brick and concrete construction. This concern manufactures fine silk and cotton laces on present equipment of 14 lace machines, operated by electric power. Albert Redfern is president; L. E. Carmen, vice-president; Irving S. Hance, secretary and treasurer; Clarence E. Chapman, chairman of board of directors. The New York office is at 102-104 Fifth Ave.

New York, Brooklyn. The Novelty Braid Mills, manufacturers of braids and trimmings at 440 19th St., are going out of business.

New York, Brooklyn. Recher & Company, who formerly operated a plant for wool combing at Plainfield, N. J., have liquidated the business at Plainfield and started a plant at 17 Marcy Ave., Brooklyn, for the mnufacture of "woolcrape," a curly mohair and hair cloth interlining. The wool combing mill at Plainfield is now conducted by W. C. Gaunt, of Bradford, Eng.

New York, Utica. A new cotton and wool shoddy and waste plant is to be erected on North Genesee St., near the Barge Canal, by a company known as the Utica Waste Co., and about 50 operatives will be employed. The company is at present located at 60 North Genesee St. G. H. Paynter is president; C. Sautter, treasurer; and William F. Jackson, secretary and manager.

Pennsylvania, Philadelphia. The Hulton Dyeing & Finishing Co., Jasper St., below Clearfield, are having plans and specifications prepared for a new steel, brick and concrete factory building to cost in the neighborhood of $25,000. The new building is to be erected at Sterner and Jasper Sts., adjoining the present plant. They are dyers and finishers of woolen and worsted fabrics, yarns and raw stock, and at the present time are busy in all departments.

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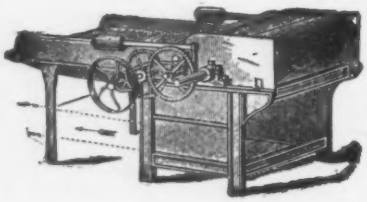

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Wool and Waste Dusters
Rag Dusters, Nappers

Improved Cloth Measuring Machines

Lumper and Duster Cylinders Refilled and Repaired

MILL NEWS

*New York, Kingston. Work has been started on the erection of a plant for the Art Silk Yarn Company, Inc., by the Fulton Albert Corp., a construction company of New York City. The plant will contain 72,000 square feet of floor space and will be equipped with special machinery now being built under the company's supervision, also steam and electric power equipment. B. W. Wilkens, the president and general manager, states that the contract calls for the completion of the plant within 45 days and that the delivery of artificial silk will start in March, 1914. The product will be artificial silk yarns from 45 to 900 deniers, not dyed. The production per year at the start will be 500,000 pounds and the plant will be built with a view to increasing this to 1,500,000 pounds. B. W. Wilkens, the president and general manager, has been connected with the silk trade for about thirty years. Charles A. Herrmann, secretary and treasurer of the company, has been connected with the silk trade in New York for many years with Frederick Vietor & Achelis, 38 E. 25th St., N. Y., with whom the new Art Silk Yarn Co., Inc., have offices. C. A. Greiner, vice-president and assistant manager, is a German chemist and will have charge of the plant. He will be assisted by Irving H. Wilkens and William Wilkens.

New York, Lockport. A second story is to be built on the mill of the Niagara Textile Company on Transit St. Plans have been filed. Huck towels and crashes are manufactured.

Pennsylvania, Philadelphia. Operating under the name of the Pennsylvania Ribbon Finishing & Watering Co., J. Knebel has equipped a plant at 414 E. Allegheny Ave. in which he is finishing and watering ribbons, belting, braids, etc., for the trade.

Pennsylvania, Philadelphia. The Pacif Hosiery Mills, 316 Delancy St., who have been engaged in jobbing hosiery, have recently installed a finishing plant and are now engaged in buying goods in the grey, which they dye and finish and sell direct.

Pennsylvania, Philadelphia. W. E. S. Dyer, engineer in charge of the erection of the new building for Baxter, Kelley & Faust, manufacturers of plushes at Tioga and C Sts., has recently awarded a contract for the erection of a one-story brick side addition to the power house of the mill at Tioga and Arbor Sts., to be 18 by 33 feet, and to cost $3,000.

*Pennsylvania, Philadelphia. The Caledonian Dye Works, whom we have reported from time to time as making changes and improvements in their plant at 1929 E. Westmoreland St., have recently placed contracts for the erection of a new two-story brick addition, 40 by 40 feet, for the purpose of enlarging their dyeing and storage capacity and also for a new office building. They are very busy, making a specialty of dyeing long and short chain cotton warps and cotton, woolen and worsted skein yarns, their present capacity being 25,000 pounds per day. This capacity will be greatly increased when the new addition has been erected and the new machinery installed.

Pennsylvania, Philadelphia. The Philadelphia Wool Scouring & Carbonizing Co., with a capital of $25,000; William F. Grover, president; Guy N. Grover, treasurer, and Charles H. Evoy, general manager, have equipped a plant at Tulip and Somerset Sts., in which they are scouring and carbonizing wool for the trade.

Alabama, Tuscaloosa. The old Sanders Cotton Mill is to be dismantled and the mill converted into an ice factory. Some of the machinery has already been disposed of by sale.

California, Marysville. John Martin, a capitalist of San Francisco, is interested in reopening the Marysville Woolen Mill, closed for several years.

California, San Diego. The San Diego Chamber of Commerce is negotiating with the Janesville Batting Mills of Janesville, Wis., regarding the location of a branch of the Janesville plant in San Diego. Efforts are also being made to interest someone in establishing a factory for the manufacture of sheetings and cotton duck in San Diego.

Canada, Quebec, Montmorency Falls. It is reported the Dominion Textile Co., Ltd., has plans for building a new $750,000 mill at Montmorency Falls, and also for important improvements and extensions to the present Montmorency Cotton Mills, and that work will be started next summer.

Connecticut, Mystic. It is probable that another attempt is to be made to operate the Royal Linen Mills. J. E. Ayers, who has what is known as a secret bleaching process, heads this project and has made several unsuccessful attempts to carry on the business.

*Connecticut, Putnam. The reported addition to the plant of the Manhasset Mfg. Co., manufacturers of automobile tire fabrics will not be built at present.

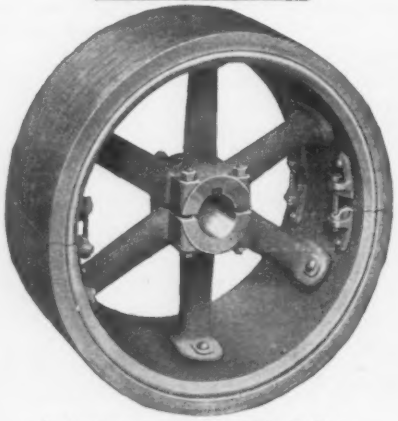
Connecticut, Thompsonville. Preparations are being made by the Hartford Carpet Corp. to reopen the ingrain department. Sears, Roebuck Co., the mail order concern of Chicago, is reported to have contracted for the entire output of the ingrain department.

Connecticut, Watertown. Some of the employes of the silk department of the Oneida Community, Ltd., of Oneida, N. Y., have arrived here and begun work in the new mill of M. Heminway & Sons Silk Company. As noted previously the Heminway Company has purchased the silk business of the Oneida Community, Ltd., and will transfer the business to Watertown.

Georgia, Atlanta. An overall factory is being established in Atlanta by the Hamilton Carhartt Company of Rock Hill, S. C., and Detroit, Mich. Machinery will be moved from the overall factory at Rock Hill. This will not affect the Hamilton Carhartt Cotton Mills.

*Georgia, Social Circle. Dickson & Hull, New York City, have been appointed selling agents for the reorganized Social Circle Cotton Mill Company. Fancy cotton goods will be manufactured and it is expected the mill will be running in a short time.

DODGE



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Dodge Iron center wood rim pulleys are especially adapted to textile service—they combine high speed with safety and are built to last for years in hard service.

In casting the iron center without a rim it is possible to eliminate the shrinkage strains to which all iron pulleys are commonly subject. Moreover, the wood and iron together renders the pulley particularly fit to absorb shocks, so that it is well adapted to drive lines of shafting or machines where the load is intermittent and thrown off and on suddenly. Finally the wood rim offers the best surface possible for belts.

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MILL NEWS

Alabama, Jacksonville. A temporary injunction has been granted by the court restraining the water company from shutting off the water from the Profile Cotton Mill and the plant has resumed operations. The ownership of the spring which supplies the cotton mill with water is to be determined by the court.

Alabama, Prattville. The Prattville Cotton Mills will shut down December 6 and will start up within a few weeks under new management. It is not known at this time who will be in control. The plant of the Prattville Cotton Mills has been greatly enlarged and improved in the last year and a half. Osnaburgs, sheetings, ducks and rope are manufactured.

Georgia, Whitehall. Reports that the Georgia Manufacturing Co. would install combers are incorrect. They have never considered putting in combers.

Illinois, Chicago. The J. L. Wood Mfg. Company has been incorporated with capital stock of $15,000 to manufacture cotton batting and similar products. This concern takes over the established business of the same name at 14 North Sheldon St., where three garnetts and one willow are operated. The men interested are J. L. Wood, M. V. Wood and William J. Denton.

Iowa, Davenport. The plant of the De Luxe Textile Company which has been in financial difficulties, has been sold to Louis Lescault, president of the Seekonk Lace Co., of Pawtucket, R. I., and others, and will be removed from Davenport before the first of January to a location near Pawtucket. The De Luxe Textile Company was established here in 1911 by Alfred Clifford, who came from Nottingham, England, and operated 8 looms on low grade laces. The concern had insufficient working capital and the plant has been closed for about two months. According to one report Mr. Lescault and his associates are forming a $300,000 company to establish a new plant in Rhode Island and will add 12 looms to the 8 looms secured from the De Luxe Company.

*Kentucky, Newport. As the result of dissension among the stockholders of the Empire Wadding Company, the projected wadding plant may not be built. Nothing definite regarding the building of the plant may be expected before May, 1914. Horace W. Harmeyer, 519 Main St., Cincinnati, an attorney, is secretary and manager of the concern.

Maine, Plymouth. Robinson & Lamb, owners of the Plymouth Carding Mill, have gone out of business. Mr. Lamb has built a small mill at Newport near his home and is doing a little work making rolls and batting under the name of U. G. Lamb & Company. The plant is about two and one-half miles from Newport Junction.

Maine, Sanford. The Seymour Textile Company has been incorporated with capital stock of $100,000 by Hiram Willard, Fred J. Allen and others.

MILL NEWS

Massachusetts, Boston. The Old Colony Cotton Company has been incorporated with authorized capital stock of $200,000 to manufacture and deal in textile fibers and their products. The incorporators are Merrill Griswold, 217 Shawmut Bank Bldg., Boston, president; Otis T. Russell, treasurer; John C. Rice, clerk. The incorporators are lawyers and little can be learned of the concern. It probably will not engage in manufacturing.

Massachusetts, Clinton. The Bellevue Mills have shut down for the balance of the month. The management expects to resume manufacturing the first week in January.

Massachusetts, Clinton. Extensive changes are being made in the weave room of the Lancaster Mills consisting in part of a rearrangement of the larger part of the equipment.

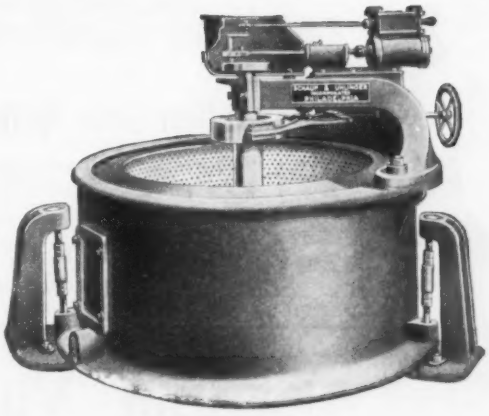
Massachusetts, Enfield. Current reports of the appointment of a receiver for the Textile Mfg. Company, refer to a concern making hardware and doing business in Westfield, Mass., which was incorporated under Connecticut laws and maintained an office at Enfield. This does not concern the Enfield Mfg. Company, manufacturers of woolen goods.

Massachusetts, Fall River. The Cotton Manufacturers' Association of Fall River has declined to grant the request of the Textile Council and the Stationary Firemen's Union for an advance in wages. The Fall River Iron Works Company, which acts independently, also has declined to grant the request for a wage increase. At meetings of the five unions affiliated with the Textile Council held subsequent to the manufacturers' refusal to grant an increase the operatives voted against calling a strike. A small majority of the weavers' union were in favor of a strike but they were outweighed by the sentiment of the other organizations. The Textile Council had demanded an increase in wages of 12 1/2 per cent. to be effective December 8, claiming that recent dividends indicated that the manufacturers could afford to meet the demand.

Massachusetts, Haverhill. A charter has been granted G. H. Pulsifer, Inc., with capital stock of $3,000 to manufacture ribbons, laces and similar goods. The incorporators are G. Herman Pulsifer, president; Harley G. Keeler, treasurer; Charles H. Poor, George H. Bixby and William E. Bixby.

Massachusetts, Lawrence. Ernest Lord & Son, a small concern which located at Broadway and Cross St. several months ago for the manufacture of worsted fabrics, has gone out of business.

*Massachusetts, Methuen. The new Merrimack Valley Mills, which recently started up the plant of the Tremont Worsted Company, has organized with Gusten Nordenstierna, president; Edwin J. Hylan, treasurer, agent and buyer; and George McCartney, superintendent. The company will manufacture men's wear and dress goods and do commission dyeing and finishing of worsted piece goods, worsted and cotton yarns, hosiery and knit goods.



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It is a complete treatise on the subject and is freely illustrated with various types of Schaum & Uhlinger Centrifugals.

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TEXTILE FINISHING MACHINERY

ARTHUR BIRCH, Proprietor **Arlington Heights (near Boston), Mass.**

MILL NEWS

Massachusetts, Millbury. The plant of the Millbury Mills has begun running on a day and night schedule.

Massachusetts, Northboro. The Woodside Mills are starting up the last of the idle looms and will run to full capacity from now on indefinitely.

Massachusetts, Smith's. The officers of the Swift River Mill are Edward Smith, president; Edward D. Miller, treasurer; Louis J. Praeger, secretary; and Richard Lees, manager. The new interest are continuing the business under the old name.

*Massachusetts, Worcester. The plant of the Bay State Worsted Company, 33 Bradley St., which it has been noted has been started up following the shut down as the result of the financial difficulties of the Bay State Worsted Company, is operating under the name of the Bradley Worsted Company, L. Bachmann & Company, New York selling agents, proprietors. D. O'Connell, the former proprietor, is acting as manager. The equipment is the same as formerly. The goods will be sold by L. Bachmann & Company instead of by Parker, Wilder & Co., through whom the product was formerly sold.

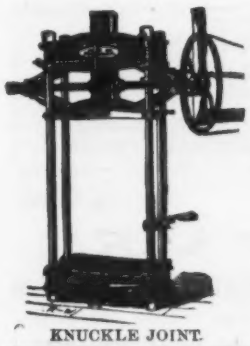
Massachusetts, Worcester. M. J. Whittall has posted notices that beginning this week all departments will be operated on full time for six days a week. For the past few months the mills have been running short time. Following the explosion of the steam cylinder on a drying machine in No. 2 mill last August, advantage was taken of the opportunity to dispose of a large surplus stock of finished goods and this with free wool becoming effective this week and a good demand for spring goods is sufficient to warrant full production.

Minnesota, Duluth. Current reports that a company is to be formed under the name of the Minnesota Woolen Company to build a mill in Duluth are not correct. We reported the organization of the Minnesota Woolen Company last August to sell trade marked blankets which are manufactured for them by the Cedarburg Woolen Mills of Cedarburg, Wis. J. F. Wittenburg of the Cedarburg Woolen Mills is secretary and treasurer of the Minnesota Woolen Company. The new company is engaged in selling "Awlwool" blankets.

New Hampshire, Guild. Fairbanks & Dorr, proprietors of the Granite State Mills, are running a part of their plant all day and all night. An enlargement was recently built and about 25 new looms added.

*New Jersey, Bloomsbury. A public meeting was held recently to further the silk mill project. A successful silk manufacturer has offered to locate a branch in Bloomsbury, under certain conditions, that will employ 100 hands.

New Jersey, Groveville. Morris & Company announce an adjustment of their affairs and the discharge of the receiver December 21. There will be no change in the management that has existed for the last three years.



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Any Size Any Power

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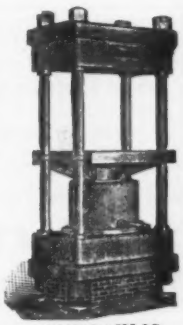

HYDRAULIC.

TO MILL OWNERS AND SUPERINTENDENTS:

Rats and Mice cause disastrous fires in Textile Mill properties by eating away the insulation of electric wiring. They destroy expensive leather belting at night when machinery is shut down. They are constantly cutting through floors and walls and are a general nusiance and pest. There are more Rats in the United States than people. Because of the fact, they breed in litters when three months old, traps and ordinary poisons are a make-shift when used for their destruction. DANYSZ VIRUS which contains disease germs fatal to Rats and Mice, only, is the latest and most scientific destroyer of rodents in the world. It will entirely rid your property of these pests. Others are using DANYSZ VIRUS to destroy rodents in their Textile Mills and we will tell YOU how to use the DANYSZ VIRUS effectively. Write for our booklet.

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Mean uniform twist, uniform speed—in short, a perfect spindle drive.

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THE CHAFFEE PATENT CLOTH BOARD,
Made of paper and wood,
Needs no covers.
Will not split or warp;
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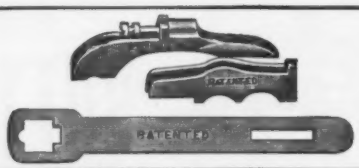

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HAND KNOTTERS AND WARP TYING MACHINES

MILL NEWS

New Jersey, Montville. The ruins of the plant of John Capstick & Sons, which was burned last February, have not been entirely cleared up. It is probable the work of reconstruction will be begun in the spring.

New Jersey, Paterson. Finkelstein & Dimond, manufacturers of broad silks and linings, have incorporated their business under the style of the Gilt Edge Silk Mills with authorized capital stock of $200,000. A branch plant is operated at New Bedford, Mass., under the style of the Gilt Edge Silk Mills and this property was recently purchased. It is understood that the plants in Paterson and in New Bedford are to be enlarged.

New Jersey, Plainfield. The wool combing plant formerly operated by Recher & Company has been taken over and is being operated by W. C. Gaunt, of Bradford, Eng. Recher & Company are establishing a hair cloth interlining plant at Brooklyn, as noted in another part of this issue.

New Jersey, Ridgefield. A company has been organized under the name of the People's Silk Company with capital stock of $125,000. The incorporators are William R. Steele, David Robertson and Wilfred W. Gleason.

New York, Brooklyn. A branch plant for the finishing of buckram and similar goods is being established by the Chandler Oil Cloth & Buckram Company of East Taunton, Mass., in Bush Terminal Bldg., No. 1. Twenty-two thousand square feet of space will be occupied by this branch. The product will be sold by H. T. Clark, 43 Leonard St., N. Y.

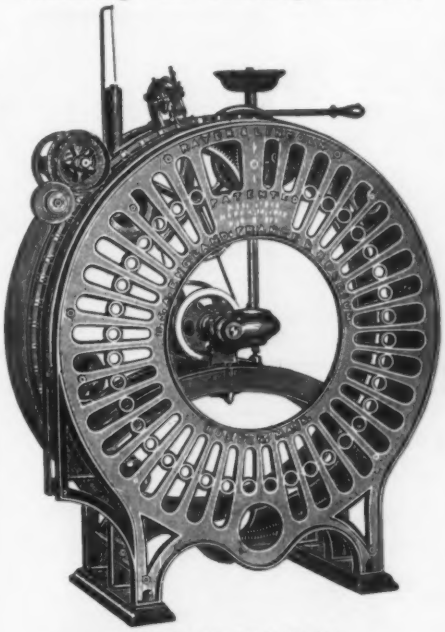
*New York, Brooklyn. Rouse & Goldstone are preparing plans and specifications for the projected new warehouse and bag factory to be erected at Wythe Ave. and S. Fourth St. by the Fulton Bag & Cotton Mills, of Atlanta, Ga. No spinning, weaving, bleaching or finishing will be carried on. Construction work will be started in the spring.

New York, Falconer. The officers of the Falconer Towel Co. plan to dissolve the corporation and operate as a co-partnership. Huck towels, Turkish towels and Terry cloth novelties are manufactured.

*New York, New Berlin. At the sale of the property of the New Berlin Silk Mfg. Company the plant was purchased by Richard S. Kidney, proprietor of the Auburn Silk Mill of Auburn, N. Y., whose bid was $10,000, or $100 more than the amount of the mortgage. The sale was confirmed and the plant will shortly be started up by Mr. Kidney.

New York, New York City. The business conducted by Edward W. Ballow, under the style of Edward W. Ballow Co., 127-31 W. 25th St., has been incorporated under the same style with capital stock of $30,000 by Mr. Ballow, Irving N. Dodge, and Amy L. Gibson. Mr. Ballow has stated that the new concern will take over the business and continue to manufacture braids and trimmings at 127 W. 25th St., as heretofore without change.

THE RAYER & LINCOLN
Rotary Sewing Trimming and Marking Machine



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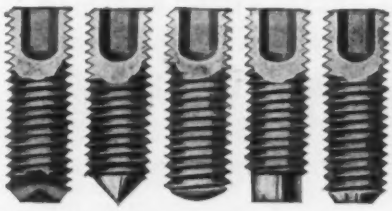

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the simplicity the exceptionally bright figures and the variety of applications possible

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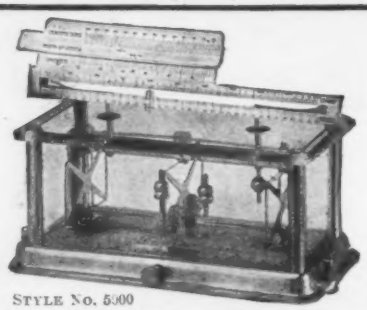

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PRACTICALLY NO WEAR
LESS FUEL LESS LABOR
INCREASED EFFICIENCY

MILL NEWS

North Carolina, Raleigh. George Duffy of the Duffy Silk Co., Buffalo, N. Y., recently visited Raleigh and other Southern cities with a view to finding a possible location for a branch plant. The Duffy Silk Company does throwing and has plants at Buffalo, Fort Plain and Phoenix, N. Y. As noted in another part of this issue the Ashley & Bailey plant at Columbia, Pa., may be taken over.

*Oregon, Salem. The Commercial Club has announced that $150,000 has been raised for the construction of a linen mill in Oregon City. The promoters plan to manufacture twine and heavy cords at first and later to add lines of finer work.

Pennsylvania, Altoona. The Altoona Chamber of Commerce is trying to secure more operatives for the Schwarzenbach, Huber Company by sending out 1,500 letters to persons in Blair County.

Pennsylvania, Columbia. A representative of the Duffy Silk Company, silk throwsters of Buffalo, with plants at Buffalo, Fort Plain and Phoenix, recently inspected the Ashley & Bailey plant. It is said that the inspection was made with a view to the purchase of the property by the Duffy Silk Company.

Pennsylvania, Erie. Three silk manufacturing concerns have applied to the Board of Trade within the last few days for information concerning inducements for establishing plants in Erie. The Erie Silk Mills, at present the only silk plant in Erie,, opposes offering inducements to other silk companies on the ground that there are no spare silk workers in Erie.

Pennsylvania, Philadelphia. The building at 2210 E. Hazzard St., occupied by the Miller Waste Manufacturing Co., and which was almost destroyed by fire several weeks ago, will be rebuilt and plans are now being prepared for the owner, E. L. Rumpf, for this purpose, the operation to be started at the earliest possible moment.

Pennsylvania, Philadelphia. The Oakdale Dye Works, owned and operated by Mathes Bros., and located at 913-921 W. York St., has been taken over by other parties who are continuing it on the old lines of dyeing cotton yarns, etc.

Pennsylvania, Philadelphia. After an existence of six months or more the Tioga Dye & Finishing Works, occupying a portion of the building at 2d and Diamond Sts., where they carried on a business of dyeing and finishing hosiery for the trade, have shut down their plant and gone out of business. The owners were Tierney & Carr.

Pennsylvania, Philadelphia. The Adams Dyeing Co., which started in business at Jasper and Letterly Sts. a year ago with a capital of $10,000, dyeing carpet yarns, have dismantled the plant and gone out of business.

Pennsylvania, Philadelphia. Migel & Blum, of Paterson, who recently started up a branch plant in this city at Coral and Adams Sts., are operating 24 looms on ribbons, with Chas. W. Yanny as superintendent.

Pennsylvania, Philadelphia. The Robert Beatty Company, manufacturers of fine cotton yarns for the underwear and hosiery trade, are very busy. They are operating 1,800 ring, 1,500 twisting and 14,000 mule spindles on carded and combed yarns, 10s to 40s, which they sell direct.

New York, New York City. A company has been organized under the name of the High Grade Mills, Inc., with capital stock of $6,000 to do a business of dyeing and bleaching of cotton. The incorporators are Henry Meyers, 785 Madison Ave., Morris J. Bernstein, 40 Morningside Ave., N. Y., and James S. Greene, 240 Harrison Ave., Jersey City.

New York, New York City. A new company has been organized under the name of the Northwestern Worsted Co., Inc., with capital stock of $20,000 to do a woolen manufacturing and trading business. The incorporators are Herman Schweikert, 1107 Bushwick Ave., and others.

New York, New York City. A charter has been granted the Bridgeport Textile Mfg. Company with capital stock of $10,000. The incorporators are Daniel B. Murray, John Ferguson, Jr., and Herman J. Schumacher, all of 54 Wall St.

New York, Utica. A charter has been granted R. H. Canfield & Co., Inc., with capital stock of $20,000 to manufacture textiles. The incorporators are Robert H. and Hannah C. Canfield, and Irving H. Irron, all of Utica.

North Carolina, Kannapolis. It is reported a 5-story mill, 200 by 100 feet, is to be built and will be used for warehouse purposes and for reworking bagging.

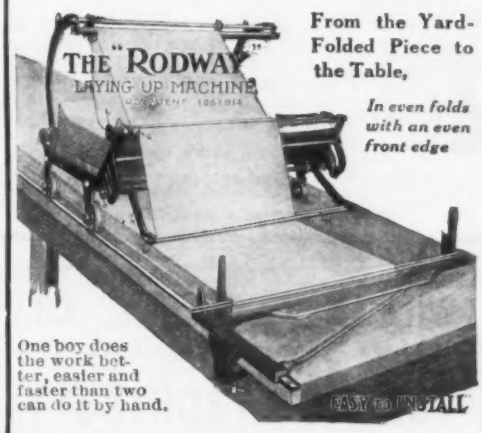
Pennsylvania, Philadelphia. The Circle Silk Company, 2734 N. 5th St., have started up in the business of manufacturing embroidery floss which is used by the hosiery trade for the purpose of tacking hosiery. They sell direct.

Pennsylvania, Philadelphia. An application for a charter is being made by Simon I. Kohn and Irving Kohn, both connected with the firm of Kohn, Adler & Co., 8th and Arch Sts., millinery trimmings, and Henry Pfromm, for the Penn Silk Mills Company, to engage in the manufacture of silk fabrics. The location of the plant, its equipment, or when it will be started up cannot at this time be learned.

Pennsylvania, Sellersville. The property known as the Hudson Peak Bldg. has been purchased by men who will establish a silk mill in Sellersville. Alfred Lohland, of New York City, and the Sellersville Board of Trade are interested.

Pennsylvania, Taylor. Some time ago it was reported that George and David Kaufman, proprietors of the Expert Silk Company of Paterson, had leased for five years with privilege of purchase, the mill formerly operated by the Taylor Worsted Company. Messrs. Kaufman have organized a new company to operate the mill under the name of the Penn Silk Company with capital stock of $50,000. David Kaufman is president; George Kaufman, treasurer and buyer, and Meyer Tanner, superintendent. Sixty looms are being operated on broad silks and this number is to be increased.

To Fold to Any Length



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In even folds with an even front edge

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The RODWAY Type . . . $150.
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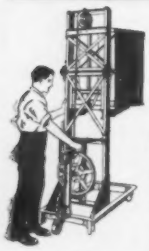

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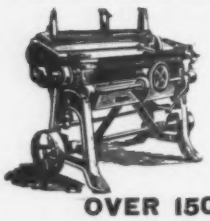

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MILL NEWS.

Albert Billson, overseer of finishing at the Faulkner Manufacturing Co., North Billerica, Mass., has severed his connection with that company.

George A. Nuttall has accepted the position of overseer of knitting and fixer for the Allensville Hosiery Mills, Towanda, Pa. He comes from Philadelphia, Pa.

Joseph Wood has been appointed temporary president of the Musgrove Knitting Co., Pittsfield, Mass., to succeed Michael Casey. Mr. Wood will serve until the next annual meeting.

William Gee has been appointed superintendent of the Nottingham Knitting Co., Oswego, N. Y. He was formerly employed at the William H. Spanswick Manufacturing Co., Fulton, N. Y.

John H. Dearnley, a retired manufacturer of worsted yarns, died at his home in Roxborough, Philadelphia, Pa., after an illness of six months. Death was caused by Bright's disease. He was born in Montgomery County fifty-two years ago, but spent the greater part of his life in Philadelphia. He had been engaged in business for over thirty years and retired from active business about a year ago. He was actively engaged in Masonic circles and leaves a widow, two sons and a daughter.

Robert Boss, for twelve years superintendent of the Draper Co., Hopedale, Mass., and for forty-three years a resident of Hopedale, died at his home in that city at the age of 67 years. He was born in Preston, England and is survived by a widow, two daughters and two sons.

Alexander King, vice-president of the American Thread Co., died at East Orange, N. J., of injuries received when he was run down by an automobile. Mr. King was born in Scotland seventy-three years ago and founded the cotton thread firm of Alexander King & Co., which was afterwards absorbed by the American Thread Co.

Henry Clinton Atwood, president of the Williamsville Manufacturing Co., East Killingly, Conn., died at his home in Danielson, Conn., at the age of 57 years after an illness of a few weeks.

J. F. Capps has been appointed superintendent of the Durham Hosiery Mill, No. 7, Chapel Hill, N. C. He was formerly employed at the Longhurst Cotton Mill, Roxboro, N. C.

James W. Williams has accepted the position of overseer of carding with the Clayville Knitting Co., Clayville, N. Y.

William Williams, overseer of knitting at the Peerless Knitting Mills Co., Mattapan, Mass., has severed his connection with that company.

Pennsylvania, Philadelphia. The C. W. Payne Hosiery Company, with C. W. Payne as proprietor, are installing 24 knitting machines, 2 loopers and 1 welter in the building at 2d and Diamond Sts., on which they will manufacture a line of 220-needle ladies' seamless hosiery, the production being sold direct and through an agent in New York. They will use 20s to 30s cotton yarn on cones.

MILL NEWS

*Pennsylvania, Royersford. Edward B. Lewis & Co., of Lansdowne, are preparing revised plans and specifications for the new 3-story mill to be built on Main St. for the Progressive Knitting Mills, now located in Spring City. The building will be 48 by 145 feet. The main office is at 122 N. Third St., Philadelphia.

Pennsylvania, Scranton. The Scranton branch of E. Sutro & Son Company has been discontinued. As noted a week ago a 3-story brick and steel building is to be built for this concern at Bridgeton, N. J. The main plant is at Philadelphia.

South Carolina, Sumter. J. T. Kopp, Jr., manager of the York (Pa.) Knitting Mills Company, Inc., has recently been here and conferred with the Chamber of Commerce with the idea of locating a plant in Sumter.

*Tennessee, Whitwell. It is reported that R. C. Aycock of the Aycock Hosiery Mills, South Pittsburg, has taken up the project again of starting a branch mill at Whitwell.

*Tennessee, Ooltewah. J. P. Parker, who heads the new knitting mill project, is a lawyer. He reports that nothing definite has been accomplished as yet.

Wisconsin, Milwaukee. The Milwaukee Knitting Company has been incorporated to manufacture and deal in knit goods with capital stock of $10,000. The incorporators are Meyer Cohen, Felix G. Rice and Stanley Michelstetter.

*Pennsylvania, Zieglerville. An agreement could not be reached between the promoters of the projected silk mill and the owners of the old mill property, and the idea of establishing a silk mill in Zieglerville has been dropped.

Rhode Island, Centreville. The explosion of a steam chest in the engine room of the Centreville Cotton Mill, B. B. & R. Knight, caused considerable damage. The sprinkler heads in the card room went off causing much damage in this department and the main driving belt and some of the other belting will have to be replaced. The mill will be shut down for a few days for repairs.

*Rhode Island, Warren. It is reported that Walter A. Guile, Sr. has resigned as head of the company which started to build a mill here under the name of the Warren Worsted Mills and that Fred B. Manley, until recently superintendent of the Stillwater Worsted Company at Harrisville, R. I., is to be associated with the Warren Worsted Mills in the capacity of agent.

Rhode Island, Woonsocket. The Woonsocket Falls Mill, the new company which is operating the old mill at South Main St. and the Blackstone River, is giving employment to twenty hands in the manufacture of plushes. Edward F. Timme is president, Otto Timme, treasurer, and Arthur Robertshaw, superintendent. E. F. Timme & Son, New York, are the selling agents. A recent difficulty with the weavers has been adjusted and the operatives have returned to work.

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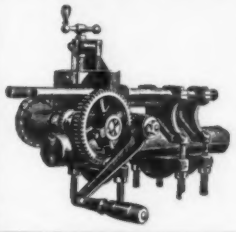

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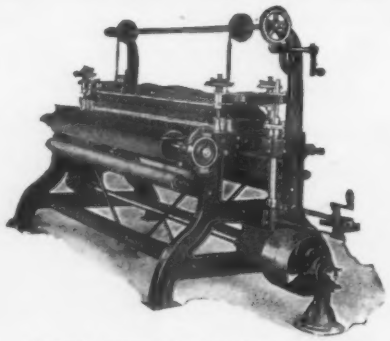

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MILL NEWS

South Carolina, Anderson. In future the Cox Mill will be known as the Equinox Mill and a charter has been applied for under this style with capital stock of $500,000. The recent purchase of this plant by Wellington, Sears & Co., Boston, and the plans for improvements have been noted.

South Carolina, Easley. A meeting of the stockholders of the Alice Mills will be held shortly to consider reducing the capital stock one-half. Sheetings are manufactured on 20,000 spindles and 500 looms. The capital stock at present is $500,000.

*South Carolina, Greenville. Changes in the management of the Westervelt Mills, now known as the Judson Mills, have been completed. The capital stock is now $1,200,000. B. E. Geer is president and treasurer; W. C. Bobo, superintendent; and G. G. Slaughter, buyer. Woodward, Baldwin & Co., New York and Baltimore, are the selling agents. The plant contains 52,640 ring spindles and 1,288 looms making fine lawns and fancies, also combed peeler yarns in skeins and warps, 50s to 80s.

*South Carolina, Rock Hill. The reported increase in the equipment of the Wymojo Yarn Mills, including 2,000 spindles, has been completed. This gives total equipment of 7,206 spindles making 2/24s lace yarns and 3/8s and 4/8s yarn in skeins and on tubes.

Texas, Belton. The Chamber of Commerce is agitating the question of reopening the Belton Cotton Mill, which has been idle for about four years. Men interested in the Corsicana Mill at Corsicana, Tex., are reported to have made an offer for the property several months ago, which was declined by the owners.

*Tennessee, Memphis. New officers have been elected by the Memphis Cotton Mfg. Company, which proposes to locate a waste cotton bleaching and manufacturing plant in Memphis. W. D. Mallory, of Sternberger Mallory Co., is president, and C. W. Thompson, treasurer. There are no indications that the company is any nearer building a plant than it was six months ago. A. L. Gardner, one of the men interested, is the inventor of what is claimed to be a new process for reclaiming and bleaching cotton linters and this process is to be used by the new concern.

*Texas, Denison. It is said the new Denison Bag & Burlap Company has decided to manufacture bags. Cotton linters will be spun into yarn, woven and made up into bags.

Virginia, Staunton. There is little truth in the current report that a woolen mill is to be established in Staunton as a result of the efforts of the Chamber of Commerce. The Chamber of Commerce has not yet succeeded even in inducing those interested to pay a visit to Staunton.

*Washington, Spokane. Gordon C. Corbaley of the Chamber of Commerce is reported to be completing negotiations for the proposed woolen mill and there are indications that a two-set mill with ten looms will be started early in 1914.

MILL NEWS.

Canada, Ontario, Brantford. H. Cook, formerly superintendent of the Slingsby Mfg. Co., Ltd., is considering plans for establishing a wool hosiery knitting plant.

Connecticut, New Haven. A branch of the Belknap Stocking Company of Laconia, N. H. is being operated in New Haven. A. E. Sanborn, Laconia, is president, superintendent and buyer.

Georgia, Douglasville. It is probable that the Douglasville Knitting Mills will move from here to some other location. J. T. Duncan, head of this concern, has been reported interested with E. McD. Baechtel in establishing a knitting plant at Nicholasville, Ky., and it is understood that this project embraces the removal of the Douglasville Knitting Mills to the new location decided upon.

Indiana, Hammond. An increase has been made in the capital stock of the Hammond Knitting Co., from $10,000 to $25,000. Gloves, mittens, sweater coats, astrachans and fancy knit goods are manufactured.

Massachusetts, Boston. An increase has been made in the capital stock of the Oakes Knitting Mills Company of West Roxbury, from $75,000 to $100,000.

Massachusetts, Great Barrington. The directors of the Reliable Knitting Company have voted to dispose of the plant as soon as a purchaser can be found.

Massachusetts, Northampton. A new concern has been organized under the style of the E. & J. Hosiery Company. Edward P. Egan, 79 Main St., Easthampton, is interested. A charter has been secured with authorized capital stock of $20,000.

*Massachusetts, Shelburne Falls. The Orange Knitting Company, which recently filed a voluntary petition in bankruptcy, has closed its plant and the property will probably be sold out.

*Michigan, Grand Rapids. The Globe Knitting Works do not intend to build for at least a year on the lot, 150 by 100 feet, immediately back of the present plant. The purchase of this lot was recently noted.

Minnesota, Minneapolis. The Wellworth Mills Company recently incorporated with capital stock of $150,000, will do a jobbing business chiefly, taking over the trade of the Rushford Knitting Mill Company at Rushford, Minn., which is now out of business, and also taking over the retail trade of the old Mankato Mills Company which was succeeded by the Mankato Spinning & Knitting Mills Company. The new concern is headed by W. L. Hixon, formerly head of the Mankato Mills Company and by W. S. Albrant, who headed the Rushford Knitting Mill Company. It will job knit goods exclusively at the start and later on will manufacture in a moderate way only such goods as cannot be purchased to advantage. The address of the concern is 27-29 N. Fourth St., Minneapolis. The equipment will consist of the ten knitting machines formerly operated at Rushford by the Rushford Knitting Mill Company.

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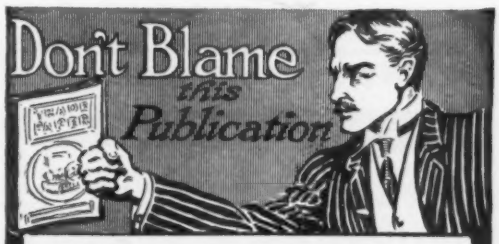

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MILL NEWS

*New York, Ballston Spa. There will be no change whatever in the equipment of the Clark Textile Company as a result of the removal into new quarters. The new location is in the Wiley Bldg., and is more desirable than the old quarters. The main plant is at Saratoga Springs.

New Jersey, Camden. The Highland Shaker Sweater Company has just been incorporated with a capital of $125,000. This company, which in the past has been a department of the Highland Worsted Mills, contains 20 knitters and 12 sewing machines which they operate on fine worsted shaker sweater coats, with H. G. Balderston as superintendent, the production being sold direct.

New Jersey, Hammonton. A manufacturer of hosiery is in communication with the Board of Trade regarding locating a branch plant at Hammonton.

*New York, Brooklyn. The Venus Silk Glove Mfg. Company has been incorporated with capital stock of $50,000. This company has a plant at Bangor, Pa., and is establishing a new plant at Franklin, Heyward and Wallabout Sts., Brooklyn. The New York office is at 229 4th Ave.

New York, Brooklyn. Louis Strauss, 259 Humboldt St., Albert J. Fau, 197 Ellery St., and Arthur Gally have organized a company under the name of Fau & Strauss, Inc., to manufacture sweaters and fancy knit goods at 233 Humboldt St.

*New York, Cohoes. The loss in the fire of last week is placed at $450,000. All the concerns whose plants were destroyed or damaged were fully insured. So far as can be learned all will reestablish in Cohoes. Moore & Tierney, who were entirely burned out, have leased the Standard Mill and within thirty days will begin to manufacture their regular lines. The Capital Knitting Company has not secured new quarters, but within a week or two will decide upon a location in one of the vacant mills in the city. The Roff Underwear Company sustained only a slight loss from water and is running again.

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MILL NEWS

New York, New York City. Louis Kempner, formerly manufacturing knit goods under the name of Louis Kempner & Co., has changed the style to Florence Knitting Mills, Louis Kempner, proprietor. The plant has been moved to the corner of Lehigh Ave. and Mascher St., Philadelphia. Ribbed and flat jersey sweaters and bathing suits are manufactured.

New York, New York City. The Hercules Knitting Company has removed to 45 E. 20th St.

New York, New York City. A charter has been granted the Reinforced Cravet Corp. to manufacture and deal in neckwear, cravets, hosiery and underwear. The incorporators are Harry J. Sondheim, 600 W. 115th St., and others.

New York, New York City. The Wooltex Knitting Mills, a new concern which has been in business since the middle of 1913, has incorporated its business with capital stock of $10,000. The incorporators are Maurice Polakoff, Samler H. Folkoff and Adolph Rosenberg. The concern is located at 310 Church St.

*New York, North Tonawanda. The new issue of stock of the Niagara Silk Mills, increasing the capital to $1,500,000, was taken by the present stockholders. The business of this concern is continually growing. In the last year they have increased the manufacturing space in North Tonawanda about 120 per cent. and the Dunkirk factory has been increased about one-third. They do not intend to erect any new buildings at this time. This concern manufactures silk gloves, underwear, hosiery and scarfs. J. T. Shanahan is president and manager.

North Carolina, Raleigh. Hugh Lynn & Bro. will build a knitting mill to be operated by water power. A dam is being built at the proposed site.

*North Carolina, Troy. Building operations are just beginning on the plant of the new Troy Knitting Mills Company, organized some months ago. Hosiery is to be manufactured, dyed and finished. Electric power will be used. The company has capital stock of $35,000. J. C. Hurley is president, and Barna Allen is treasurer and buyer.

Pennsylvania, Philadelphia. David Block, individually and trading as David Block & Co. and the American Knitting Mills, of Philadelphia, has made application for a discharge from bankruptcy and a hearing will be held on the application at the United States District Court at Philadelphia on December 31.

Pennsylvania, Philadelphia. The Casten Hosiery Mills, reported by us as removing from South 3rd St., to 265 South Fourth St., are operating 25 knitters, 12 sewing machines and 9 loopers by electric power on men's and women's 200-needle hosiery. M. H. Casten, the proprietor, is also engaged in the jobbing business and makes a specialty of buying goods in the grey and finishing them up in his own plant and selling direct.

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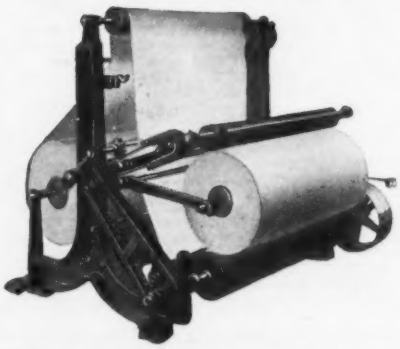

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General Subjects

Advanced Textile Design, *Watson*	$4 00
Art of Soap Making, *Watt*	3 00
Calculations in Yarns and Fabrics, *Bradbury*	1 25
Carpet Manufacture, *Bradbury*	3 00
Color in Woven Design, *Beaumont*	6 00
Design Texts, *Umpleby*	2 50
Drying by Means of Air and Steam, *Hausbrand*	2 00
Flax, Hemp and Jute Spinning and Twisting, *Carter*	3 00
Improved Slide Rule, *Hogg*	3 50
Introduction to Study of Textile Design, *Barker*	2 50
Jacquard Weaving and Designing, *Bell*	4 00
Manual of Weave Construction, *Kastanek*	1 00
Silk Throwing and Waste Silk Spinning, *Rayner*	2 50
Simplex Tables	50
Spinning and Twisting of Long Vegetable Fibres, *Carter*	5 00
Story of Textiles, *Walton*	3 25
Technical Testing of Yarns and Fabrics, *Herzfeld*	3 50
Textile Design, *Woodhouse and Milne*	3 25
Textile Design, *Umpleby*	3 00
Textile Design and Color, *Watson*	2 50
Textile Fibres, *Matthews*	4 00
Textile Soaps and Oils, *Hurst*	2 50
Textiles, *Barker*	2 00
Warp Preparation and Weaving, *Nelson*	3 00
Waterproofing of Fabrics, *Mierzinski*	2 50
Weaving, Plain and Fancy, *Nelson*	1 25

Cotton Manufacture

Carding and Spinning, *Ivey*	$1 00
Chemistry of Tape Sizing, *Cooper*	1 50
Cotton Carding, *Lindsay*	50
Cotton Cloth Designing, *Holmes*	2 00
Cotton Combing Machines, *Thornley*	3 00
Cotton Manual, *Broadbent*	75
Cotton Mill Commercial Features, *Tompkins*	5 00
Cotton Mill Machinery and Calculations, *Parker*	1 50
Cotton Spinning, *Hedrick*	3 00
Cotton Spinning (3 vols.), *Taggart*	7 50
Cotton Spinning, (3 vols.), *Thornley*	6 50
Cotton Waste, *Thornley*	3 00
Humidity in Cotton Spinning, *Dobson*	1 50
Loomfixing and Weaving, *Ivey*	1 25
Mule Spinning, *Thornley*	3 00
Plain Series of Cotton Spinning Calculations, *Cook*	1 00
Practical Cotton Calculations, *Whitworth*	1 00
Self-Acting Mules, *Thornley*	3 00
Structure of the Cotton Fibre, *Bowman*	3 00
Students' Cotton Spinning, *Nasmith*	3 00

Woolen and Worsted Manufacture

Cone Drawing, *Buckley*	$ 50
Faults in the Manufacture of Woolen Goods and their Prevention, *Reiser*	2 50
Finishing of Textile Fabrics, *Beaumont*	4 00
How to Make a Woolen Mill Pay, *Mackie*	2 00
Manual of Cloth Finishing	6 50
Practice in Finishing Woolens and Worsteds, *Greene*	50
Principles of Wool Combing, *Priestman*	1 50
Principles of Woolen Spinning, *Priestman*	2 50
Principles of Worsted Spinning, *Priestman*	2 50
Structure of the Wool Fibre, *Bowman*	3 00
Wool Carding and Combing, *Barker and Priestly*	1 50
Woolen and Worsted Loomfixing, *Ainley*	1 00
Woolen and Worsted Finishing, *Zimmerman*	3 00
Worsted Overlooker's Handbook, *Buckley*	50
Worsted Preparing and Spinning, *Bradbury and Buckley*	1 50

Bleaching, Dyeing, Printing, Finishing, Etc.

Aniline Black, *Noelting and Lehne*	$5 00
Bleaching and Dyeing of Vegetable Fibrous Materials, *Hubner*	5 00
Bleaching of Linen and Cotton Yarn and Fabrics, *Tailfer*	5 00
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Mercerization (2 vols.)	7 50
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Practical Cotton Finishing	1 25
Principles and Practice of Textile Printing, *Knecht and Fothergill*	10 50
Principles of Bleaching and Finishing of Cotton, *Trotman and Thorp*	5 00
Printing of Textile Fabrics, *Rothwell*	6 00
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Textile Chemistry and Dyeing, *Olney*	3 00
Textile Fabrics and Their Preparation for Dyeing, *Hasluck*	1 00

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MILL NEWS

*Canada, Ontario, Brantford. H. Corks, formerly superintendent of the Slingsby Mfg. Company, Ltd., and previously reported interested in plans for establishing a wool hosiery knitting plant, states that there is little possibility of his establishing a plant in the near future.

Canada, Ontario, Welland. Smart-Woods, Ltd., have purchased the Empire Cotton Mills, Ltd. Smart-Woods, Ltd., previously held the controlling interest in the Empire Cotton Mills, Ltd.

Connecticut, Hazardville. It is reported that a representative of the American Thread Company has been here looking for a possible location for a branch of the Willimantic Mills and that the land of the Du Pont Powder Company may be secured with valuable water privileges.

Connecticut, Norwich. The Reliance Yarn Company has been incorporated with authorized capital stock of $75,000, of which $30,000 has been paid in, by John Campbell, Jeremiah J. Desmond and Philip Henault, formerly treasurer of the Reliance Worsted Company, which recently went out of business. This new corporation will continue the sale yarn department of the Reliance Worsted Company and will make woolen and merino yarns.

Kentucky, Louisville. It is reported that the old plant of the Hope Worsted Yarn Company, which discontinued manufacturing two or three years ago, has been leased by the Ford Automobile Company and will be used as an assembling plant. The property is in the hands of the bondholders of the Hope Worsted Yarn Company.

*Massachusetts, Boston. There will be no changes in the plant of the Oakes Knitting Mills Company of West Roxbury as a result of the recent increase in the capital stock.

Massachusetts, Northampton. The Northampton Hosiery Company has been incorporated with capital stock of $10,000 to manufacture knitted hosiery. The incorporators are Frederick Oliver, president; Thomas J. Roberts, treasurer; and Edward E. Cooney, clerk.

Massachusetts, Webster. The Stevens Linen Works have shut down this week for the annual inventory and repairs. Manufacturing will be resumed on January 5.

North Carolina, Forest City. H. G. Alexander is raising subscriptions for a cotton mill project and would like to interest outside capital. It is said that $35,000 has been subscribed locally.

North Carolina, Kannapolis. Machinery is beng received for the new plant of the Cabarrus Cotton Mills of Concord, which has been under construction for several months past. The new mill will have 15,000 to 20,000 spindles.

North Carolina, Littleton. The property of the Littleton Hosiery Mills, which has been idle for the past year or two, has been purchased by F. H. Mead, of Farmville, Va.

Massachusetts, Worcester. A meeting of creditors of the Queensbury Mills will be held at the office of Referee Charles F. Aldrich on January 6, at which time a petition to sell certain property will be considered.

Michigan, Chesaning. The Big Rock Knitting Company, which recently shut down, will find a new location and resume manufacturing as soon as possible.

Michigan, Detroit. A new knit goods manufacturing concern has been organized under the name of the Victor Knitting Company, with authorized capital stock of $25,000.

Newfoundland, St. Johns. The Newfoundland Knitting Mills, Ltd., has succeeded British Woolens, Ltd., and is manufacturing underwear, sweaters and blankets. The plant contains two sets of cards, three looms and 16 knitting machines. F. C. Smythe is manager.

New Jersey, Paterson. The Tarr Silk Company, manufacturers of broad silks, have moved from the Essex Mill to the Addy Mill on Ryle Ave.

New Jersey, Paterson. The Macri Silk Dyeing Company has been incorporated with authorized capital stock of $100,000 to begin business with $4,200 paid in, and will occupy the building at 159-61 Marshall St., formerly occupied by H. H. Brown & Son. The incorporators are Antonio Macri, Joseph Macri and Antonio Albrogio.

New Jersey, Paterson. Wishnack & Hollritt, manufacturers of broad silks on Van Houten St., have dissolved partnership and the business will be continued by Frank Joseph Hollritt.

New York, Little Falls. An increase has been made in the capital stock of the Gilbert Knitting Company from $200,000 to $800,000. No changes of any kind will be made in the equipment or management at present. Cotton and wool sweaters, sweater coats and underwear are manufactured. Fire recently broke out in a frame storehouse owned by the Gilbert Knitting Company and caused damage estimated at $1,000. The operation of the plant is not affected.

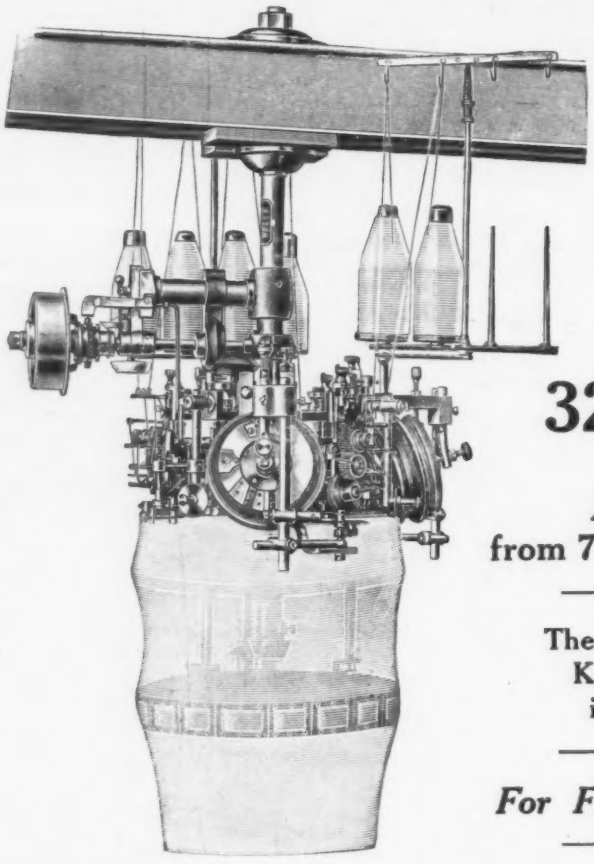
*New York, New York City. No changes will be made in the business of Edward W. Ballow & Co., manufacturers of braids and trimmings, as a result of the recent incorporation of the business.

New York, New York City. The Hope Webbing Co., 396 Broadway, has leased a loft at 87 Walker St.

New York, New York City. The Gem Baby Wear Co., Inc., has been organized with capital stock of $10,000. The incorporators are Gertrude V. Marcus and Aaron I. Marcus, 1425 Madison Ave., New York.

New York, Saratoga Springs. The Clark Textile Company has increased its capital stock from $200,000 to $1,000,000 but does not contemplate any increase in the main plant or any of the branches. Ladies' woven tip silk gloves and jersey cloth are manufactured.

G. STIBBE & Co., LEICESTER, ENGLAND.



"Fouguet" Frames

Are built in any gauge up to

32 needles per inch

Any Diameter from 7 inches to 54 inches

The Most Versatile Knitting Frame in the World

For Flat Work Only

This type of machine is the best for fancy work such as Striping, Tucks, Lace, Collarettes, Etc. But on plain work it also has the following advantages over all other types: IT MAKES PERFECT WEB ON EVERY GRADE OF YARN and will take *without preparation* from the lowest shoddy to the wiriest pulp yarns.

These Frames do not require skilled help

Full particulars, samples and catalogues from our New York Representative:

Howard Sillcocks, 1310 Downing Bldg., 106 Fulton St., N. Y. City

*Pennsylvania, Tower City. The foundation for the mill to be erected by the new Bestock Underwear Company has been laid and contract for the building has been awarded to Dietrich & Son, Pottsville. The mill will be 50 by 100 feet, 4 stories high, and will be equipped to manufacture only a high grade of women's underwear. As noted in a previous report the new corporation has capital stock of $50,000 and is headed by Solon D. Bausher, proprietor of the Gotham Underwear Mill at Hamburg, and president of the Unrivaled Hosiery Mill, Inc., at Williamstown; John B. Lesher, treasurer of the Unrivaled Hosiery Mill, Inc., of Williamstown, and George E. Zook, formerly of Hagerstown, Md., who recently removed to Hamburg. A number of residents of Tower City have invested various amounts in the new concern.

Iowa, Atlantic. A further enlargement is to be made by the Atlantic Knitting Co., and to provide funds for this increase. $25,000 of new 8 per cent. preferred stock is to be issued. It is stated that the business of the company is to be doubled. Sweater coats and fancy knit goods are manufactured on a present equipment of 15 flat knitting and 10 sewing machines. W. Rotenborg is superintendent, Carl Lauritzen, treasurer, and Hans Jersild, superintendent.

Idaho, Burley. A company is being organized to establish a knitting mill here under the name of the Idaho Knitting Mills Company. H. H. Sessions & Bros., Box 325, Burley, Idaho, are interested.

*Tennessee, Dayton. Manufacturing has been started in the plant of the new Dayton Hosiery Mills Company. A. D. Andrews is manager and Garnett Andrews, of Chattanooga, is general manager and buyer.

*New York, New York City. S. E. Summerfield is president and treasurer of the new Gotham Silk Hosiery Co., Inc., recently organized with capital stock of $250,000, to take over the plant and business of the Gotham Silk Mfg. Company. The concern has 20 full fashioned knitting machines, 16 sewing machines, and 50 looms. It has been noted that the knitting department of the business is to be increased.

Mississippi, West Point. A change has been made in the name of the Lorraine Cotton Mills and hereafter business will be done under the style of the Cardinal Mills Company. The plant was originally known as the West Point Cotton Mills. C. E. Wilkins continues as president and sales manager and J. R. French as secretary, treasurer and manager.

New Hampshire, Ashuelot. The Sheridan Woolen Mills have shut down, but it is expected locally that manufacturing will be resumed in a few weeks.

New Hampshire, Dover. The work of tearing down the buildings of the old Cocheco Print Works by the Pacific Mills is being rushed.

New Hampshire, Gonic. An electric generator has been purchased by the Gonic Mfg. Company from the General Electric Company.

Missouri, St. Louis. Since the Lowell (Mass.) Bleachery established a branch of its works in St. Louis there has been much interest in the establishment of converting plants in this section. For some months a study of local conditions, including water, has been carried on by J. C. Leadbetter, and articles of incorporation have been filed by a new concern, with which he will be connected, under the name of the St. Louis Bleaching & Dye Works, with capital stock of $100,000. It is understood that a firm of architects has been commissioned to prepare plans for a modern plant and that an option has been secured on a site in Carondelet. Among the concerns that have offered encouragement and promise of actual business are the following: Carleton Dry Goods Co., Brown Shoe Co., Ferguson-McKinney Dry Goods Co., Rice-Stix Dry Goods Co., Angelica Jacket Co., Roberts, Johnson & Rand Shoe Co., Hamilton Brown Shoe Company, Ely & Walker Dry Goods Co., and Wear Bros. Dry Goods Commission Co. Oliver J. Grace, one of the organizers of the new company, is quoted as saying the new plant will be in operation in a few months.

*Wisconsin, Milwaukee. Good progress is being made on the construction of the new mill for the Van Dyke Knitting Company at South Pierce St. and 16th Ave.

*Montana, Great Falls. The new flax fiber company, recently noted, has organized under the style of the Northern Flax Fibre Company, not the Montana Flax Fibre Company as stated recently. This corporation owns a retting process that has proved thorough and cheap and which they claim adds to instead of destroying the tensile strength of the fiber. It is the intention of the company to erect a number of tow plants throughout Montana at flax producing centers and one ten-ton plant is now nearing completion at Conrad, sixty miles northwest of Great Falls on the Burlington Railway. Thomas Couch, the president of the company, and George Pearson, the superintendent and fiber expert, have been in Europe for some time but will return to Great Falls within the course of the next week or ten days, when they will know more about what they will do in the machinery purchasing line. The capital stock of the company is $250,000. Thomas Couch is president; S. R. Jensen, treasurer; O. M. Holmes, secretary; and George Pearson, superintendent. Mr. Pearson came from Nottingham, England, where he was a yarn bleacher, and claims to have a secret process for manufacturing flax. He has also been in the employ of flax spinners in Ireland and England and more recently with Canadian concerns. He was reported early in 1912 as organizing a company to be known as the Montana Flax Fibre & Cordage Company at Fromberg, Montana.

New Hampshire, Contoocook. John A. Dady, president of the J. A. Dady Corp., Putnam, Conn., has bought the plant of the Conant Mfg. Company and will continue it in operation. D. E. Conant, president and superintendent of the Conant Mfg. Company, will be retained as manager.

*Wisconsin, Janesville. The Janesville Batting Mills were delayed only three days by the recent fire.

Real Assistance

The assistance readily obtained from the use of

Wyandotte Textile Soda

and

Wyandotte Concentrated Ash

is the assistance that eliminates a great amount of worry and much needless waste of time and money.

Used as a bleach assist, and in dyeing of sulphur colors Wyandotte Textile Soda proves itself worth many times the price asked for all you need to use to obtain the desirable results it guarantees.

And again when used for dyeing purposes it imparts to the cottons that silky look; that softer feel, and eliminates entirely that red bronze effect so common where soda ash is used.

If you do kier boiling you can use Wyandotte Concentrated Ash with equally as much profit and improvement as you obtain from the use of Wyandotte Textile Soda for the uses for which it is recommended.

This is partly due to the purity of Wyandotte Concentrated Ash, its beneficial effect on the water and its power of increasing penetration.

And as compared to soda ash only one half the quantity of Wyandotte Concentrated Ash will give unmeasurably better results and at an equal and often times less cost.

Order from your supply house and ask us if you wish further information.

The J. B. Ford Co., Sole Mfrs., Wyandotte, Mich.

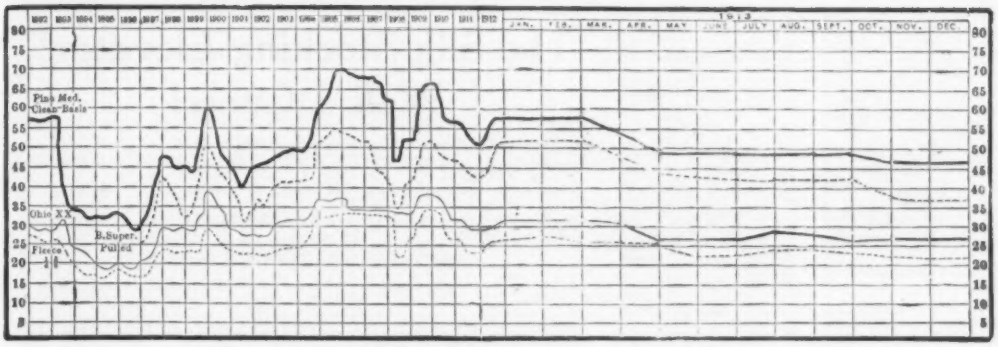


CHART SHOWING RANGES IN THE PRICE OF WOOL TO DATE.

THE WOOL MARKET

A fair volume of business has been done in the home market despite the unsettled conditions and the closing of accounts at the end of the year. Manufacturers, however, have as a rule shown no disposition to increase their stocks of raw material very far beyond their actual requirements. The uncertainty surrounding the goods market by reason of the new tariff's going into effect on January 1 has made spinners conservative. Many of them remember that under the Wilson bill calculations as to what foreign manufacturers could do, afforded no certain indication as to what they actually did do. The prices at which foreign goods were dumped on the American market under the Wilson bill rates of 40 and 50 per cent. on goods were not only disastrous, but incomprehensible. That is what strengthens the determination of wool manufacturers now to go slow in buying raw material, and wait for developments in the goods market under a tariff of 35 per cent.

Foreign markets for wool have remained firm, although there is a pronounced recession in the business of the mills. The financial situation is unsatisfactory and business men are in anything but a confident mood. They are ready to take fright at any untoward event, and under such conditions a reduction in the quoted price, instead of proving an inducement to buying, is likely to convince them that further decline is inevitable, and thus to stop business entirely. A few months under the new tariff will undoubtedly do much to clear the air.

Reports from the South American markets for wool indicate a very strong position, the following being a cable received by one of the leading wool firms of Boston as this issue goes to press:

"Market very strong and advancing. Heavy purchases for American accounts now going on at higher prices. Three-eighths blood skirted is quoted at 24 1/2 cents and the high quarter, 23 1/2 cents; straight quarter, 22 cents, luster Lincoln, 21 cents. The supply of choice bright wools is rapidly diminishing."

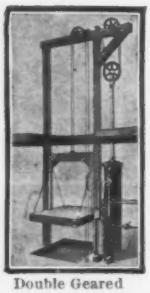
New Hampshire, Gilsum. It is reported that John H. Williams, until recently agent of the Kennebec Mills of the American Woolen Company at Fairfield, Me., will start up the Gilsum Woolen Mill, making a line of fancy woolens. The Gilsum plant contains four sets and 28 looms.

TETRAZO COLORS
FOR COTTON

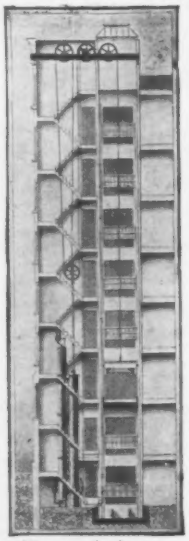
We offer these products in all shades for the dyeing of cotton in any form. Among them will be found colors specially adapted to meet the various requirements of fastness to light, washing, cross dyeing and fulling.
Shade cards and samples, with full information, cheerfully furnished on application.

AMERICAN DYEWOOD COMPANY
NEW YORK PHILADELPHIA BOSTON HAMILTON, ONT.

Direct Acting



Double Geared



Elevator in Large Soap Factory in Jersey City

The Silk Stocking Elevator! Well, I Guess!

All you Old Bachelors know the Onyx Hosiery.
Greatest line of hosiery in the world, and $8,000,000 worth a year sold by Lord & Taylor.
The finest silk hosiery of this brand are made at Dover, N. J., in immense factories.
AND THE SAME BRAINS THAT HAS MADE A SUCCESS OF THE BUSINESS

HOOKED 'ER TO THE BILER

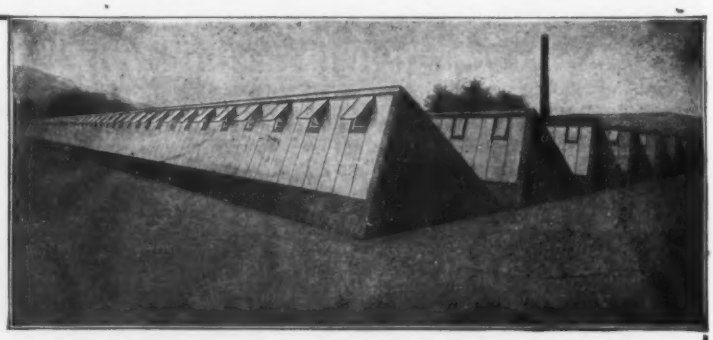
Before you decide upon elevators why don't you find out why all these great concerns all over the land are putting in Ridgway Elevators?
Write to Paul Guenther Co., Dover, N. J., and ask them what they think of Ridgway elevators.
Here's what we gave them
1. *An elevator that runs at no cost for power.*
2. *Foolproof.* The "fools" can only put the elevator out of running with a sledge hammer.
3. *No repairs.*
4. *Always goes so long as the boiler holds together.*
5. *Goes when the engine is shut down and engineer goes home.* As circus man says, "This feature alone is worth full price of admission."
6. THE ONYX FOLKS DID NOT PAY ONE CENT UNTIL THE ELEVATOR MADE GOOD.
NEITHER WILL YOU.
What kind of wheels must you have in your head to miss a proposition like that.
These are some of the reasons the great concerns all over the land

"Hook 'er to the Biler"

CRAIG RIDGWAY & SON CO., Coatesvile, Pa.

ELEVATOR MAKERS TO FOLKS WHO KNOW

Ventilation Results At a Low Cost



Don't you often stop at FIRST COST and forget the bigger item of the future MAINTENANCE.

Don't you occasionally have trouble with a skylight leaking or giving out altogether or a window opening device getting cranky or busting up. This is where the MATERIAL reference comes in.

And now for RESULTS.

Anti-Pluvius puttyless skylights and Straight-Push and Lovell sash operators are doing for others highly satisfactory service without more than ordinary attention, this in our understanding of results. Specializing is skylights and sash openers with trade names

ANTI-PLUVIUS
(Trade Mark)
Puttyless Skylights

that have a factory and organization behind them, we aim to provide what will obtain the maximum returns for the expenditure. Drouvé stands for quality and another way to spell this is RESULTS.

The G. DROUVÉ CO., Bridgeport, Conn.

180 N. Dearborn Street, Chicago, Ill.

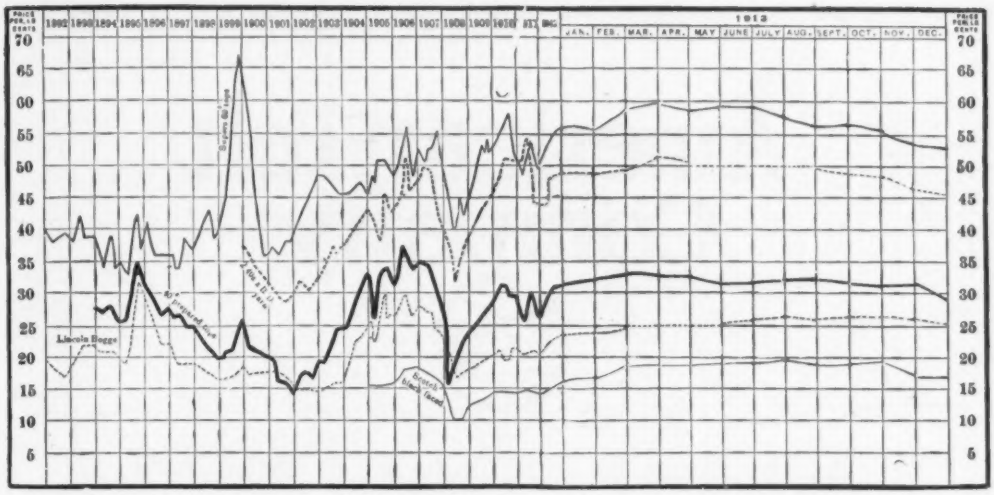


CHART SHOWING COURSE OF PRICES FOR WOOL, TOPS, AND WORSTED YARN AT BRADFORD, ENGLAND

THE BRADFORD MARKET

Bradford, Eng., Dec. 26, 1913.

By persistently refusing to buy, consumers in this market have succeeded in pulling values down, but thus far without benefit to themselves. Wool is above the parity of tops and spinners' margins have been sacrificed, but no considerable influx of business has come in. Short time working is spreading through the spinning trade, most manufacturers have looms standing and those combing operatives who depend on night work for employment are in receipt of public relief. The situation is bad, but not hopeless, as the general condition of finance is clearing and there are expectations of new business in the New Year.

American demand will be welcomed more warmly now than at any time for years past. Although business with America has not developed yet on any large scale, there are reports of the sale of a wide range of wools and some goods. Mazamet skin wools, mill wastes and English wools have been sold from Bradford to the United States. American restraint is bidding up pieces of light-shrink crossbreds in the London Sales has been noticed with interest and there are some grounds for believing that attention will be directed from this class to merinos. Business is reported in worsted serges for America and in small weights of tops. Samples are out in abundance, upon which orders may at any time come, but expectation does not date any brisk demand before the spring.

The Bradford market can be relied on not to put up prices of its own motion and to continue its bear tactics until there is a decided change in demand.

MILL NEWS

North Carolina, Weldon. The Weldon Cotton Mfg. Company is considering installing ring spindles to replace the present equipment of mule spindles. The matter is very indefinite as yet.

Rhode Island, Central Falls. The Abedare Weaving Co., manufacturers of cotton and silk fabrics, are having a number of looms changed to give a wider reed space in order to weave wider goods.

Rhode Island, Warren. In the near future the Cutler Mills will begin work on the extensive improvements and machinery additions noted a short time ago. No. 3 mill will be reopened and a part of No. 2 mill will be reequipped with yarn machinery.

*South Carolina, Abbeville. It is reported the directors of the Abbeville Cotton Mills have decided to make the enlargements contemplated about a year ago. It is proposed to build an addition at the east end of the present plant which will approximately double the capacity. Twenty-eight thousand ring spindles and 940 looms are operated on export sheetings.

*South Carolina, Clinton. Contract for 3,000 additional spindles to be installed in the Clinton Cotton Mills has been awarded. This enlargement was recently noted.

*South Carolina, Graniteville. At the meeting of stockholders of the Graniteville Mfg. Company called to authorize an increase in the capital stock from $600,000 to $1,000,000, it was voted to make the increase in accordance with the recommendation of the directors. As noted in a previous report the old looms will be taken out of the Graniteville Mill and replaced with 700 automatic looms and the capacity of the Vaucluse Mill will be doubled. In all about 10,000 spindles and 700 automatic looms will be added, but no contracts will be made until after January 1.

American Felt Company

TRADE MARK

As the oldest felt manufacturers in the country we have most closely studied your requirements. As the largest manufacturers we are best able to meet your needs. As the most progressive manufacturers we are now for our mutual protection putting our trade-marked name on our

ROLLER, CLEARER AND SLASHER CLOTHS

By ordering American Felt Company cloths you are guaranteed uniform high quality, greatest variety, longest service and best prices. If your nearest supply house does not provide you, order of us direct.

American Felt Company

TRADE MARK

SEND FOR SAMPLES
BOSTON, 103 Bedford Street
NEW YORK, 114 E. 13th Street

Make sure that your roller coverer uses our brand. The trade-mark is your guarantee.

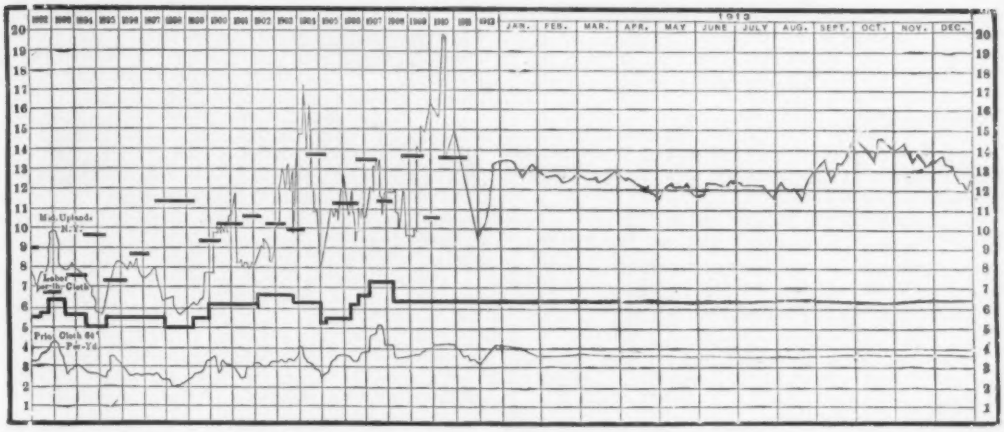


CHART SHOWING RANGE IN THE PRICE OF COTTON TO DATE.
The short, heavy, horizontal lines indicate the size of the cotton crops in millions of bales.

THE COTTON MARKET

A decided increase of cotton ginned, as compared with last year, belief that the crop will reach 14,500,000 bales, growing depression of the cotton trade abroad and unsettled conditions of trade in this country have combined to depress the market for raw cotton. The difference of about 4,000,000 bales between the ginning report and the movement into sight has led to the belief that a large amount of cotton is being held in the South. The movement into sight from Sept. 1 to Dec. 26 is reported by the "Chronicle" for a series of years as follows:

Year	Bales
1913, Dec. 26	8,998,311
1912, Dec. 27	9,099,847
1911, Dec. 29	9,306,200
1910, Dec. 30	8,133,925
1909, Dec. 31	7,169,456

The same authority estimates the world's visible supply on Dec. 26 at 6,028,185 bales, as compared with 6,338,005 bales on corresponding date in 1912, 5,637,060 bales in 1911, and 5,362,961 bales in 1910. Leading grades of Egyptian cotton are quoted by Richards, Atkinson & Haserick as follows:

S. E. P.	22½
O. R. D.	21⅝
T. I. Z.	20¾
A. D. E.	20⅜
M. A. H.	18½

MILL NEWS

*Massachusetts, Worcester. The Worcester Tire Fabric Company, whose organization was recently noted, will establish a plant on Union St. for weaving tire fabrics, beginning operations about February 1. The new company has capital stock of $50,000. Arthur D. Sykes, Rockville, Conn., is president and treasurer, and Peter Reilly, superintendent. The superintendent and treasurer both do buying.

*North Carolina, Lexington. Erlanger Bros., 65 Worth St., New York City, the owners of the new Erlanger Cotton Mills, expect to have the plant in operation in February. It is not yet incorporated and the exact name has not been definitely decided upon. This mill will make special cloth for the manufacture of B. V. D. underwear. It will have 25,600 ring spindles, 680 looms, and steam and electric power. Two hundred and fifty hands will be employed. Work was started on this plant in April, 1913. J. M. Gamewell is superintendent, and G. W. Montcastle, of Lexington, is buyer.

Alabama, Demopolis. The Demopolis Cotton Mills, which succeeded the Elmore Cotton Mills, plan to install a small bleaching plant to bleach cotton waste and linters.

WEIMAR BROS. MANUFACTURERS OF Cotton Mercerized Tapes
SPOOL TAPES, BINDINGS AND NARROW FABRICS FOR UNDERWEAR AND OTHER TRADES
Phone Connections. Works, 2046-48 Amber Street, PHILADELPHIA, PA.

MILL NEWS

*North Carolina, Valdese. A charter has been secured for the projected cotton yarn mill under the name of the Valdese Mfg. Company, with authorized capital stock of $125,000, $50,000 subscribed. Among the men interested are J. E. Garrou of the Waldensian Hosiery Mills, Valdese, W. A. Erwin and S. V. Upchurch, president and superintendent respectively of the Alpine Cotton Mills at Morganton.

*Massachusetts, Adams. Outside work on the new additions to the main mill of the Renfrew Mfg. Company are completed and it will be but a short time before the interior work is finished. Detailed reports of these enlargements have been given previously.

*Massachusetts, New Bedford. Plans are out for the additions to the Beacon Mfg. Company. The lot is being cleared.

*Massachusetts, Newburyport. Repairs will be made at once to the waste house and picker room of the American Textilose Co., which was recently badly burned. The mill is running as usual.

*Massachusetts, Webster. Contractors are figuring on plans for the construction of two cotton mills, to be known as numbers 7 and 8, for S. Slater & Sons, Inc., bids for which close Monday. The mills are to be of brick, mill construction and will be from plans prepared by Charles T. Main, Boston. The new buildings are to be used when completed as a weave shed with a capacity for 750 looms, an increase over the present weave shed of 50 looms, and as a spinning mill, which is to be at right angles to one end of the present spinning mill. They will replace the oldest building of the Slater cotton plant at Webster. As noted previously the contract for an enlargement to the woolen mill has just been awarded at $110,000.

*New Hampshire, Nashua. Work has been started on the foundation for the 5-story addition to the plant of the Nashua Mfg. Company, which will be 100 by 150 feet. A previous report of this addition and increase in equipment has been given.

New Hampshire, Suncook. Two new twisters and four new fancy looms have been installed in the China Mill Department of the Suncook Mills. Six new spinning frames are being put in the Webster Mill and 100 automatic looms in the Pembroke Mill.

*North Carolina, Brevard. Arrangements will be made soon after the first of the new year for the reported increase in the equipment of the Brevard Cotton Mills, Inc. C. B. Skipper, of Charlotte, recently purchased an interest in this concern and on January 1 will become president and manager. He will add as soon as possible 2,000 spindles and it is probable that a further increase will be made before the end of the year. A specialty is made of 2/40s cotton yarns from long staple cotton. W. C. Cleveland is treasurer of the reorganized company; W. M. Darby, superintendent, and J. Hudson Williams, buyer.

North Carolina, Greensboro. The Revolution Cotton Mills advise that work will soon be started on the previously reported enlargement which will double the plant. Forty thousand spindles and 1,140 looms will be installed for manufacturing canton flannels. H. Sternberger is vice-president and buyer; E. Sternberger, president; and G. T. Stone is superintendent.

North Carolina, King's Mountain. The Cora Cotton Mills have ordered 1,000 spindles and preparatory equipment. There is space in the present buildings for this additional machinery.

North Carolina, Lowell. Machinery is being set up in the addition recently built to the plant of the Peerless Mfg. Company and will be running at an early date. John C. Rankin is president and superintendent and S. M. Robinson is treasurer and buyer. Messrs. Rankin and Robinson were interested in building a new mill in the vicinity of Charlotte, with Charles B. Skipper who has recently purchased an interest in the Brevard (N. C.) Cotton Mills.

North Carolina, Randleman. Still further enlargements and improvements are being made by the Deep River Mills. The latest improvement is a new warehouse and cloth room for which the foundation is now being laid. It will be 2 stories and basement, located near the mill office. The new power plant, which develops 1500 h. p. and runs the three mills, is operating satisfactorily.

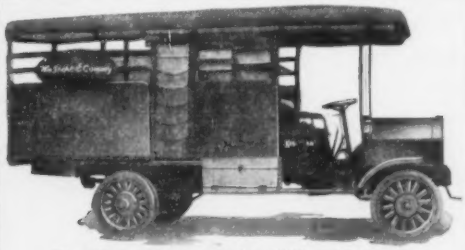
North Carolina, Spray. The Thread Mills Company, controlled by Marshall Field & Co., of Chicago, and operating the American Warehouse, the Lily Mill, Nantucket Mills, Rhode Island Mill, Spray Woolen Mill of Spray, and the German-American Mill of Draper, will build a $150,000 steam power plant to furnish power to its various plants. The company states that plans and specifications in connection with this new central power house are not yet in shape for a report to be given.

*South Carolina, Greenville. Eight new General Electric motors ranging from 5 h. p. to 50 h. p. are to be added to the power equipment of the Panola Cotton Mill.

Vermont, Burlington. New wide looms are being installed in the Chace Mills. Both the Chace Mills and the Queen City Cotton Company here are running full time.

*Georgia, Social Circle. N. C. Richardson will be superintendent of the Social Circle Cotton Mill Company, a reorganization of the old Social Circle Cotton Mill. As noted previously, W. P. Wallace of Rutledge will be president. It is expected the mill will be started up shortly.

New Jersey, Clifton. S. B. Sargent, formerly connected with the Fidelity Mfg. Company of Charlotte, N. C., has leased the building formerly occupied by the Passaic Metal Wear Company at Central and Highland Aves., and is equipping a plant for the manufacture of cotton damasks. It is understood he will start with 60 looms and auxiliary machinery under the name of S. B. Sargent Textile Company. In October it was reported Mr. Sargent would establish his new plant in New York City, but a change evidently was made in the plans.



KisselKar Truck Operated by William Stickel Co., Jersey City, N. J.

Service is written into the sale of KisselKar trucks

When you select a motor truck you want to be sure that it is *mechanically right*—one which has demonstrated in actual use that it is adapted to *your* requirements. It is not enough *that it looks* good. What it has done out on the road is the information you want.

But do not let your investigations rest there. Find out about the reputation of the manufacturer. Find out about his financial standing. Find out about his manufacturing facilities. Find out his method and manner of SERVICE.

And when you look into KisselKar SERVICE—the *all-important factor to a truck owner*—you find SERVICE *written into the sale*—not vague promises, but a definite and specific contract, with complete facilities to insure its performance—and back of this service is stability and responsibility.

You are entitled to the *uninterrupted* use of your truck, adequate provision to supply you quickly with duplicate parts, the requisite skill to install or replace them and regular inspection—all at the least possible cost.

There is no truck that can show a cleaner duty record than the KisselKar Truck. There is no other maker that offers you equal service.

Illustrated portfolio just issued. Send for your copy.

KisselKar Trucks are built in six sizes—1500 lbs., 1, 1½, 2½, 3½ and 6 ton capacity

Kissel Motor Car Company

528 Kissel Ave., Hartford, Wis.

Boston, New York, Chicago, Kansas City, Milwaukee, Minneapolis, St. Paul, San Francisco, Oakland, Los Angeles, Dallas and 300 other American and Canadian points.

KISSELKAR TRUCKS

Why did the Holeproof Hosiery Co.

adopt the Kaumagraph Process? Their enormous output is marketed at a small margin of profit. They demanded a trade-marking process that was economical, above everything. The almost negligible cost of the Kaumagraph Process, its rapidity, the beauty and permanence of marking quickly determined its adoption.

KAUMAGRAPH PROCESS

OF TRADE MARK STAMPING FOR ALL TEXTILES

The Kaumagraph Process is the only process that will mark successfully every kind of fabric—dark or light, rough or smooth, ribbed or plain, from silk to blankets. It stamps any design or trade-mark, however elaborate, on any fabric in any color (silver and gold also) with absolute uniformity and perfect detail.

You buy Kaumagraph stamps **ready for use,** either in packages or in rolls of thin paper tape. They are applied automatically to goods during some process of manufacture, or very rapidly by hand with unskilled labor. Their cost is insignificant, especially in large quantities.

Silver and gold stamping costs no more than colors by the Kaumagraph System. It is much more rapid than any of the decalcomanie processes because Kaumagraph stamps do not need to be cut apart or wet. Kaumagraph impressions are dry, do not blurr or offset, and as the composition tends to penetrate the goods instead of remaining on the surface, the Kaumagraph stamp is more permanent than any other on the market.

The Kaumagraph Process is used on practically all fabrics now being advertised. Manufacturers who are considering trade-marking their goods or adopting more efficient and economical methods of trade-marking are urged to write us frankly without thought of obligaton. Meanwhile use the coupon now.

TEAR OFF AND MAIL THE COUPON

Kaumagraph Co., 209 W. 38th St., New York

Send me samples and more information

My name, address and firm name are written below

MERCERIZED YARNS

DYERS, BLEACHERS, GASSERS

Dyers of Colors Fast to

SUN AND BLEACHING

Aberfoyle

Manufacturing Company

CHESTER, PA.

310 Lafayette Building
Philadelphia

746 Insurance Exchange
Chicago

THE J. R. MONTGOMERY CO.

Windsor Locks, - Conn.

MANUFACTURERS OF

Novelty Yarns — Boucle, Bourette and Spirals, in Cotton, Wool, Worsted, Mohair and Silk.

Cotton Warps — on Beams, Jack Spools, Tubes and Cones. In Fancy Twist, Colors and Printed.

Mercerized Cotton Yarns — Gives the High Silk-Like Lustre in Knit Goods and Woven Fabrics.

ARABOL MANUFACTURING COMPANY,

100 William Street New York.

Sizing, Stiffening, Softening and Finishing Compounds, Glues, Gums, Dextrines, Starches, China Clay, Bone Size and Grease, Soap, Tallow, Weighteners.

EVERYTHING IN SIZINGS, Etc. SAMPLES MATCHED. HIGH GRADE GOODS.

MONUMENT MILLS, HOUSATONIC, MASS.

HIGH GRADE COTTON YARNS White, Colors, Bleached

On Beams, Jack-Spools, Cones, Skeins and Chain Warps

FAST-BLACKS & COLORS { For Woolen Mills a Specialty } WE SELL DIRECT

C. MOORE & CO.

Manufacturers of

Twines, Threads and Yarns

Jacquard Harness Twines of all kinds on hand and made to order

S. W. Cor. Fifth and Market Sts., Phila.

JOHN F. STREET & CO.

Cotton Yarns

PROVIDENCE, R. I.

Providence, Chicago, Philadelphia, New York

JAMES E. MITCHELL CO.

COMMISSION MERCHANTS

COTTON YARNS

122-124 Chestnut Street, - - - Philadelphia, Pa.
Brown Building, 185 Summer Street, - Boston, Mass.

LUDWIG LITTAUER

YARNS

Tram, THROWN SILK, Organzine.
ARTIFICIAL OR WOOD SILK.

Plain, Gassed, Mercerized, Prepared and other Cotton Yarns. Polished and Glazed Threads and Yarns. Mohair and Worsted. Tinsel and Turkey Red Yarns

Best Quality Harness Twine

109 GREENE STREET, NEW YORK
Silk Throwing Mills BOONVILLE and YONKERS, N. Y.

YARNS

BUFF and WHITE SILK WRAPPERS

And all Grades of Wrapping Stock for the Textile Trade

MANUFACTURED BY

STANDARD PAPER CO. - Kalamazoo, Mich.

HIGH GRADE **PRESS PAPERS** FOR SILK, WOOLEN AND KNIT GOODS FINISHING

ALSO Jacquard Cards AND Specialties

THE MERWIN PAPER COMPANY

MILLS: RAINBOW, CONN.-HARTFORD, CONN.

Eastern Two-Ply Warps, Carded Peeler

2/30s	30½
2/36s	37½
2/40s	39½
2/45s	43½
2/50s	46½
2/60s	54½

THE PHILADELPHIA MARKET

7s and coarser	21
8s and 9s	21¼
10s	21½
12s	22
14s	22½-23
16s	23-23½
18s	24
20s	24½
22s	25
24s	25½-26
26s	26
30s	27
40s	34
50s	39

Southern high grade mule yarns:—

Cones

10s	24
12s	24½
14s	25
16s	25½
18s	26
20s and 22s	26½-27
24s	27½

Southern frame yarn, lower grades:—

6s and 8s	21
10s	21

Eastern cones (high grade quality):—

10s	24½
12s	25
14s	25½
16s	26¼
18s	26¾
20s and 22s	27¼-27¾

Skein yarn (mostly Southern):—

4s and 8s soft	21
10s and 12s	21½-22
14s and 20s	22½-24
22s	24½
10/2	21½
16/2	22
20/2	23½
30/2	26½
40/2	33
8/2	21
7/6	21

Southern warps:—

10/1	21½
14/1	22½
16/1	23
20/1	24
22/1	24½
26/1	25
30/1	26½
8/2	21
12/2	22
14/2	22½
16/2	23
20/2	23½
26/2	25½
30/2	26½
40/2	33
50/2	39

P&B RAMIE YARNS
In all numbers for
Knitting, Weaving and Laces
Manufacturers
Erste Deutsche Ramie Gesellschaft
Emmendingen, Germany
Sole Agents
PFALTZ & BAUER
Importers
300 PEARL STREET
NEW YORK

E. WHEELER JENKINS
RALPH S. BYRAM, ASSOCIATE
TRIMMINGS of All Kinds
FOR KNIT UNDERWEAR
Mariner and Merchant Bldg., 3d and Chestnut Sts., PHILA., PA.
N. Y. Office, 366 Broadway

THE DEPENDABLE
GOLD STAMPS
SKETCHES AND SAMPLES ON REQUEST
MEYERCORD CO. PHILADELPHIA & CHICAGO.

PRINTING ... EMBOSSING ... DESIGNING
APCo
We Can Save Your $
We specialize on bands, labels, box tops, tickets, stickers, and commercial printing for the Textile Trade and kindred industries.
Acme Print Co., Reading, Pa.

THE HALL LACE CO., Jersey City, N. J.
MANUFACTURERS OF
LACES AND INSERTIONS
in qualities, widths and designs especially adapted for trimming knitted underwear.
E. WHEELER JENKINS, SELLING AGENT
Mariner and Merchant Bldg., 3d and Chestnut Sts., PHILADELPHIA
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THE J. R. MONTGOMERY CO.

Windsor Locks, - Conn.

MANUFACTURERS OF

Novelty Yarns — Boucle, Bourette and Spirals, in Cotton, Wool, Worsted, Mohair and Silk.

Cotton Warps — on Beams, Jack Spools, Tubes and Cones. In Fancy Twist, Colors and Printed.

Mercerized Cotton Yarns — Gives the High Silk-Like Lustre in Knit Goods and Woven Fabrics.

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100 William Street New York.

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In all numbers for
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Erste Deutsche Ramie Gesellschaft
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THE DEPENDABLE
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PRINTING EMBOSSING DESIGNING APCO
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Acme Print Co., Reading, Pa.

THE HALL LACE CO., Jersey City, N. J.
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New York Office, 366 Broadway.

S. T. Crocker, Pres. W. F. Stiles, Treas.

ORSWELL MILLS
FITCHBURG, MASS.
Capacity, 45,000 Spindles.
HIGH GRADE YARNS
From Egyptian and Peeler Cotton, Carded or Combed, in Chains and Skeins, on Balls, Beams, Spools, Cops, Cones, Tubes, Single or Twisted.

JENCKES SPINNING COMPANY
PAWTUCKET, RHODE ISLAND
COTTON YARNS
CARDED and COMBED, in Nos. 10 to 120, from PEELER EGYPTIAN and SEA ISLAND COTTONS.
MERCERIZED YARNS, IN SINGLE OR PLY, A SPECIALTY

INDUSTRIAL MILLS CO.
Jasper and Huntingdon Sts. Phila., Pa.
Manufacturers of
NARROW FABRICS
SPOOL TAPES, STAY BINDINGS AND BRAIDS
also Sole Manufacturers of
SAXON
New Guaranteed Non-Shrinkable Tape

Reels for Cotton WOOLEN AND WORSTED
Patented Hosiery Winders, Cop Winders and Spoolers.
LINDSAY, HYDE & CO.,
2134 to 2138 East York St., PHILADELPHIA, PA.

Knitting and Weaving YARNS
Cones, Cops, Warps, Skeins,
Single, Double, Three-Ply, etc.
Peeler, Egyptian, Mixed Colors.
Large Assortment
EDWARD S. HYDE
226 CHESTNUT STREET
Philadelphia, Pa.

F. W. MAURER & SONS CO.
MANUFACTURERS OF
Fringes, Tapes, Bindings & Narrow Fabrics
Office and Factory: WAYNE AVE. and BRISTOL ST.
PHILADELPHIA

Fred Sternberg & Co.
530 BROADWAY, NEW YORK
MERCERIZED, GLAZED, GASSED } COTTON YARNS

The Bradley Stencil Machine
Makes stencils in half a minute, at reduced cost of 1-10 cent each. Write for catalogue and price list.

In universal use by thousands of manufacturers and shippers.
Also manufacturers of Oil Stencil Board. Write for prices and samples.
101 Beekman St.
New York, U.S.A.

HUGHES FAWCETT
115 and 117 Franklin St., New York
Linen Weaving and Knitting Yarns
Linen Jacquard Harness Twines
And Linen Yarns and Threads for every purpose
Turkey Red Yarns
LARGE STOCK PROMPT DELIVERIES

LINDSAY THOMPSON & CO., LTD.
FLAX SPINNERS BELFAST, IRELAND
Linen Weaving and Knitting Yarns
LINEN THREADS OF EVERY DESCRIPTION
T. J. PORTER & SONS Large Stocks
Selling Agents, Philadelphia Quick Delivery

THE RAMIE AGENCY **RAMIE THREADS AND YARNS**
Manufacturers' Agents
Ramie Slivers and Rovings *Ramie Gas Mantle Threads, and Everything in Ramie*
45 EAST 17TH STREET, NEW YORK

THE LINEN YARN MARKET

The latest advices from Belfast have it that orders for yarns have not been very plentiful except in the coarse tows. Spinners, however, are well booked ahead so that prices remain firm and unchanged with an outlook which seems to be quite good.

Linen yarns in the American market is not particularly active at the present time, a prevailing condition during the month of December, but this trade is expected to open up strongly during January. Prices remain unchanged.

("A" Quality)

35s Lea on cones	85
50s Lea on cones	90
60s Lea on cones	95
80s Lea on cones	1.00
90s Lea on cones	1.10
100s Lea on cones	1.15
110s Lea on cones	1.30
120s Lea on cones	1.50

MILL NEWS

*North Carolina, Mariposa. John J. Ormand and Charles A. Davis, the new owners of the Mariposa Cotton Mill, expect to have the plant in full operation by January 1. They will make 20s single and 2-ply cotton yarn. James E. Mitchell Co., Philadelphia, will sell the output. The plant will be operated under the name of the Mariposa Mill.

*North Carolina, Worthville. The Riverside Mills, Inc., recently organized by the purchasers of the Worthville plant of the Worth Mfg. Company, will start up the mill January 15. It has not been fully decided just what lines of goods will be made and the selling agent has not been selected. The new Riverside Mills, Inc., has capital stock of $125,000. J. S. Lewis is president; C. J. Cox, treasurer and buyer; and George S. Caine, superintendent. The Worthville plant contains 5,200 ring spindles and 248 looms. The new company does not take over the Central Falls plant.

*Tennessee, Trenton. As reported at the time of the incorporation of the Lovera Cotton Mills the new corporation takes over the Trenton Cotton Mills. R. A. Love, Gastonia, N. C., is president; and G. W. Wade, is treasurer. Extensive repairs about the property have been under way for several weeks past.

Mississippi, McComb. It is reported the Delta Cotton Mills, Inc., are to discontinue operations and stock is being run out of the machinery. The reason for this step and the future plans for the property have not been announced. Print cloths were manufactured.

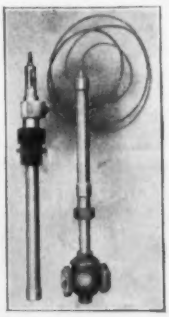
Connecticut, Unionville. Charles W. House & Sons have completed the construction of their new 3-story mill and are equipping it for the manufacture of felt novelties.

Canada, New Brunswick, Dorchester. The Oxford Worsted Co., formerly of Amherst, N. S., has reorganized under the style of the Oxford Worsted Linens, Ltd., with capital stock of $50,000 and has moved its plant to Dorchester. This concern started business about four years ago on a small scale and has gradually enlarged. It is planned to add more looms in the spring. Hammocks, lap robes, shawls, linen dress goods, and towels are manufactured. H. Lockwood is manager and buyer.

Iowa, Lake Mills. The equipment of the Lake Mills Woolen Mill has been purchased by the Nashua Woolen Mills of Nashua, Ia., and moved to their plant.

*Massachusetts, Franklin. The contractor expects to complete the new addition to the Franklin Yarn Company's plant within ten days or two weeks. An addition 110 feet long and 70 feet wide, 1 story high, in the rear of the present mill is being built. The equipment will be increased.

*Massachusetts, Taunton. The Maurice Lobsitz Mfg. Co. will complete the removal of its equipment from Philadelphia to the new plant in Taunton by Jan. 1. Wool stock, garnetted stocks, waste and camel's hair stocks, noils, etc., are manufactured on 13 sets and 4 garnets. For the present, this will be the equipment at Taunton, and it is planned to run night and day and to steadily increase the equipment, eventually doubling the capacity. A plant is to be installed for carbonizing purposes. Electric power will be used throughout the plant.



SARCO TEMPERATURE REGULATOR

FOR TANK, DYE BATH AND ROOM REGULATION

No compressed air
No flat diaphragms
No electricity
No gas expansion
No metal expansion

This Temperature Regulator can be used for the regulation of temperature in dye tubs, to maintain them at the proper boiling temperature.

The Sarco is constructed on a new principle and supplies its own motive power. It is cheaper to install and costs nothing to operate.

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SARCO ENGINEERING CO. **114 Broad St., New York**

BOSTON MASS. BRADFORD ENG.
RICHARDS, ATKINSON & HASERICK
IMPORTERS
TEXTILE MACHINERY
MILL SUPPLIES
EGYPTIAN COTTON
PHILADELPHIA OFFICE "THE ARCADE"

A. G. THURSTON & SON
Manufacturers of
Fluted Rolls, Pressers for Flyers
AND GENERAL MACHINERY
Specialties made of Renecking, Refluting, Filing and Honing of all kinds of Rolls. Flyers Repaired and Fitted with any desired Style of Pressers, Spindles Straightened, Restepped and Retopped.
BOX 528, FALL RIVER, MASS.

Lowell Crayons Meet the requirements of any cotton, woolen or worsted mill.
May we send samples? 15 colors and white
LOWELL CRAYON CO. Original Manufacturers LOWELL, MASS.
TRADE MARK ON EVERY BOX

S O A P S **HIGH GRADE SOAPS** S O A P S
Bleaching, Fulling and Scouring
Red Oil and Olive Oil Crown Soaps
J. O. Draper Co. Est. 1860 Pawtucket, R. I.

Established 1796

Special shaped carbon, black diamond, **pointed tools** for turning paper, rag, corn husk and cotton **calender rolls**, hard rubber, fibre, etc. Manufactured by
Thos. L. Dickinson, Successor to John Dickinson, 64 Nassau St. New York City

Established 1844.
BENJ. BUCKLEY'S SON,
(WM. J. BUCKLEY) *Gun Mill, Patterson, N. J.*
Manufacturer of all kinds of SPINDLES, FLYERS, RINGS, TUBES, CAPS, etc., for Cotton, Silk, Flax, Woolen and Worsted Machinery.
Roving Spindles and Flyers a Specialty. Light Forgings.
REPAIRING OF ALL KINDS.

Elliot Cloth Folder and Measurer
FOR PRINT WORKS GINGHAM AND COTTON MILLS BLEACHERIES' ETC., ETC'
Send for circular. Manufactured by
ELLIOTT & HALL, 54½ Hermon St., Worcester, Mass.

MILL NEWS

*Maine, North Monmouth. All contracts have been let by the Winthrop Mills Company for the improvements in the power department. They are installing a new cement dam, new water wheels, and electric power plant.

*Massachusetts, Clinton. Construction work has been completed on the new 3-story brick mill of the Bigelow Carpet Company which was started in August, and machinery is now being installed. The building is 133 by 77 feet, and takes the place of the old wool house which will be turned into a storehouse. The top floor is being equipped as a drying room, the second floor as a wool room, and the first floor will be used for scouring. Much of the scouring and drying equipment from the old mill is being installed but a considerable part of the equipment will be new machinery.

*Rhode Island, Nasonville. A corporation has been formed under the style of the D. W. & K. Company, under the laws of Rhode Island, by Herman Waterhouse and his associates interested in the Nasonville Woolen Mill property. An addition, 250 by 60 feet, is under construction. The old boiler house is being torn down and boilers and engines moved preparatory to building a new boiler house and installing new and larger engine and boilers. Most of the old machinery in the Nasonville Mill is being disposed of by sale and the equipment that is kept will be supplemented by a large number of new looms and some of the machinery in the Waterhouse & Howard Mill at North Adams, Mass.

*Massachusetts, West Millbury. Manufacturing has been started by George F. Geb in the old Ramshorn Mill. Mr. Geb will make woolen, merino and silk noil weaving and knitting yarns for the market, under the style of the George F. Geb Yarn Mill, operating two sets of cards. He was formerly overseer of carding for the Franklin Yarn Company at Franklin, Mass.

Massachusetts, Worcester. The plant of the Bay State Worsted Company, 33 Bradley St., which recently has been in financial difficulties, has resumed manufacturing.

Canada, Ontario, Berlin. F. E. Macklin, a dealer in dry goods, recently purchased a few knitting machines which he will set up early in January and manufacture a special line of hosiery.

*Canada, Ontario, Elora. T. A. Carswell and A. E. Carswell have begun manufacture of astrachans and novelty knit goods with 4 knitting machines and 2 sewing machines, buying 3 to 10 single and double worsted yarn, 10 to 18 single cotton yarn. They are manufacturing under the name of the Elora Textile Company.

F. C. BARTON
65 Worth Street, New York
MANUFACTURERS OF
"LILY" BRAND NARROW FABRICS
WEB, TAPE, BINDINGS, ETC.

THE BIAS NARROW FABRIC CO.
F. C. BARTON, President
65 Worth Street, New York
Bias and Straight Cut Fabrics and Ribbons.
Embossing and Cutting Customers Own Goods a Specialty.

MILL NEWS

*Maryland, Elkton. E. Sutro & Son Company, of Philadelphia, are the manufacturers negotiating with the Elkton Realty Company regarding establishing a hosiery knitting mill in Elkton. The Realty Company will build a mill 40 by 64 feet, 2 stories high, and rent it to the Sutro Company. Work on the new mill will begin in a few days and it is expected equipment will be installed and manufacturing started about February 15. Electric power will be used. As noted a week ago E. Sutro & Son Company, whose main plant is at E. Thompson and Clearfield Sts., Philadelphia, have made similar arrangements for a branch plant at Bridgeton, N. J.

*New Jersey, Bridgeton. E. Sutro & Son Company, E. Thompson and Clearfield Sts., Philadelphia, manufacturers of fine hosiery, confirm the report that they will take a 5-year lease of a 3-story brick and steel factory building, 80 by 36 feet, to be built by Bridgeton capital. The small branch finishing plant operated in Bridgeton will be moved into the new mill and a large amount of additional machinery for knitting and finishing will be installed.

*New York, Brooklyn. The Forest Knitting Mills, previously reported establishing a plant at 50 Summerfield St., will begin operations January 1, making men's, boys' and children's sweaters with 6 circular and 4 flat knitting machines and 15 sewing machines, operating by electric power. H. D. Buck is buyer.

New York, New York City. The Beach Bathing Suit Co., Inc., recently organized, are manufacturing knitted bathing and gymnasium suits at 34 W. 33d St. Cornelius J. O'Hern, who heads this company, was formerly with the Columbia Bathing Suit Company.

*New York, Poughkeepsie. The Queen City Knitting Mills, Inc., a new concern recently organized, has established a plant at 357-63 Main St. and is making sweaters and sweater coats, employing 20 hands. The plant is operated by electric power. A. Stein is president; S. Stein, treasurer; C. W. Smith, superintendent and buyer.

North Carolina, Wilmington. John H. Kuck, secretary and treasurer of the Carolina Metal Products of this place, is establishing a plant for manufacturing men's and women's hosiery and will begin operations in February under the style of Kuck's Hosiery Mills. Initial equipment will be 50 176-needle knitting machines. It is expected that this number will be increased to 100 machines before the end of the year, also that a dyeing and finishing department will be completed. At first the product will be sold in the grey. After it is dyed and finished at the plant it will be sold direct to the jobbing trade.

*Pennsylvania, Galeton. The Galeton Knitting Mills, reported incorporated in August, have equipped a plant on Bridge St. and are manufacturing men's half hose, ladies' and misses' hosiery, using 12s to 36s yarns. The equipment consists of 50 knitting machines and one sewing machine. W. G. Johnson is president, superintendent and buyer. Dudley Humphries is treasurer; E. W. Parks, New York, is selling agent. Gas power is used.

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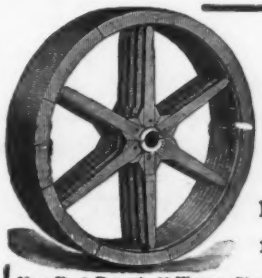

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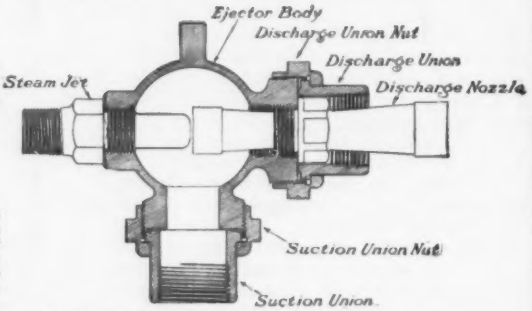
has no such internal moveable parts. The steam jet and discharge nozzle are the only wearable parts and they are made interchangeable. No engine or motor power is required. Simply turn on the steam valve and the ejector will heat and deliver the bleach at the same time effecting a big saving in steam and fuel.



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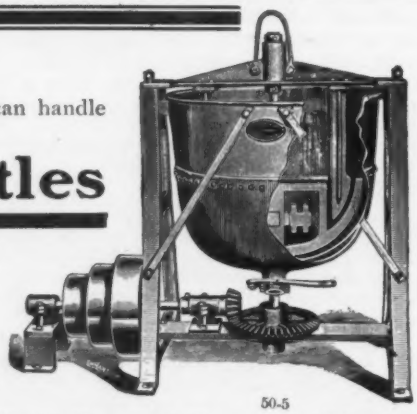

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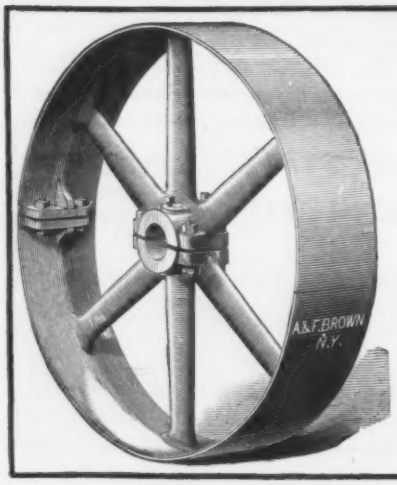

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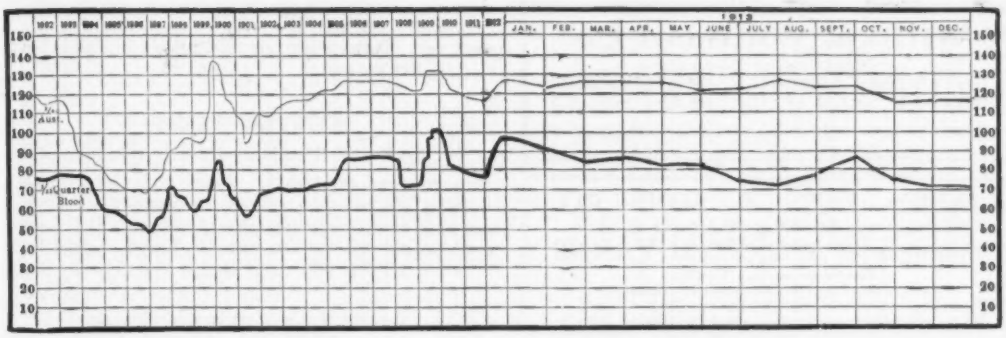

GRAPHIC CHART SHOWING RANGE IN PRICE OF WORSTED YARN.

WOOLEN AND WORSTED YARN MARKETS

Spinners of worsted yarns report that they are waiting on the consumer for orders. The manufacturers as a rule are playing a waiting game, believing that some change will take place after the first of January. This condition applies to all lines of manufacture using worsted yarn. The sweater business for the past year was extremely short because of the mild weather, but orders for 1914 are now coming in and the trade expects a good business for this year.

There is very little doing in the weaving end of the business on account of the new tariff on cloths which went into effect the first of the year. The weavers are waiting to see what will take place in the markets before ordering any quantity of yarns. They are, however, sampling 2/24s quarter bloods, 2/36s 3/8 bloods, 2/40s and 2/50s half bloods at prices ranging from 87 1/2 cents for 2/40s and 65 to 67 1/2 cents for quarter blood.

As soon as the weavers feel reasonably certain as to the course of the wool market, they will be ready to contract for their requirements. To-day's prices will enable the manufacturer to compete on certain lines of foreign goods such as staples.

There is very little business doing. Some of the spinners are working four days a week, others running full, while still others have plenty of business on their books, but cannot get specifications until later. Spinners state that it looks as though they would have a fair season.

BRADFORD SPUN YARN

2/16 Ingrain (black)	54
2/16 Ingrain (light grey)	55
2/16 Ingrain (white)	56
2/12 to 2/16 low common	60-62½
2/20 to 2/24 low 1/4	62½-65
2/20 to 2/25 1/4 blood	65-67½
2/26 to 2/28 1/4 blood	68½-71
2/32 1/4 blood	70
2/20 3/8 blood	70-72½
2/26 3/8 blood	72½-75
2/32 3/8 blood	75-77½
2/36 3/8 blood	80-82½
2/40 1/2 blood	87½
2/40 delaine	95
2/50 delaine	1.00
2/40 Australian	1.15
2/50 Australian	1.25-1.27½
2/60 Australian	1.35-1.37½
3/28 luster	95
3/30 and 3/32 luster	95-97½
3/36 luster	1.10-1.12½

FRENCH SPUN MERINO YARNS—FINE ONE-HALF BLOODS

Standard Grade

1/20 50/50 White Merino Cop	65
1/30 50/50 White Merino Cop	67
1/40 50/50 White Merino Cop	70
1/20 60/40 White Merino Cop	68½
1/30 60/40 White Merino Cop	70½
1/40 60/40 White Merino Cop	73½
1/20 70/30 White Merino Cop	71½
1/30 70/30 White Merino Cop	73½
1/40 70/30 White Merino Cop	77
1/20 80/20 White Merino Cop	74
1/30 80/20 White Merino Cop	76
1/40 80/20 White Merino Cop	78
Sliver and Sanitary Mixes	3c. more
Coning on 1/20	2c. more
Coning on 1/30	3c. more
Coning on 1/40	4c. more

FRENCH SPUN YARN

1/20 1/4 blood	65
1/20 high 1/4	67½
1/20 3/8	75
1/20 high 3/8	76-78
1/20 1/2 blood	80
1/30 1/2 blood	82
1/40 1/2 blood	84
1/50 delaine	95-97½
1/40 Australian	1.12-1.15
1/50 Australian	1.17½-1.20
1/60 Australian	1.30-1.32½
1/70 Australian	1.40-1.42½

William Whitman Co.
COMMISSION MERCHANTS
COTTON and WORSTED YARNS
BOSTON NEW YORK PHILA. CHICAGO CHARLOTTE

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MINERVA MILLS
Spinners of WORSTED YARNS
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In the Grey and in all colors and mixtures
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Imported Worsted Yarns
For Knit Goods, Men's Wear and Dress Goods

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For two ply Knitting Twist add 5c. additional to above prices.
For two ply weaving yarns add 7 1/2c. additional to above prices.

KNITTING YARNS

Dyed and Bleached—Bradford System

2/7s straight 1/4 blood	72½
2 and 3 ply 10s-15s straight 1/4 blood	75
2 and 3 ply 16s-20s straight 1/4 blood	75
2 and 3 ply 20s-24s straight 1/4 blood	77½-80
2 and 3 ply 24s-28s straight 1/4 blood	80

WOOLEN AND MERINO YARNS

Spinners report a slow business, but is expected to improve in all lines. Orders are already in hand and more business is expected to come in after the manufacturer begins to deliver his goods. Contracts are being placed for fair sized quantities of woolen yarns and others are expected to come in at an early date. Prices are firm and have not changed since our last report. There is no prospect of their becoming any lower. Some spinners predict an advance.

WOOLEN AND MERINO YARNS

2/20 Light Grey Mixed	80%	20%	52-55
2/20 Light Grey Mixed	90%	10%	57½-60
2/20 Light Grey All Wool			62½
2/20 Colored All Wool			60
2/20 Bleached	80%	20%	62½-65
2/20 Bleached	90%	10%	67½-70
2/20 Bleached All Wool			70-72½
2/23 Colored All Wool			62½-65
2/23 Bleached 90/10			67½-70
2/23 Bleached All Wool			72½-75
2/25 Light Grey Mixed All Wool			80-82½
2/25 Bleached All Wool			85-87½

THE RAG AND SHODDY MARKET

Dullness has been the rule in the market for rags, shoddy and waste. This has been due not only to the general conditions in the trade, but also to the closing of accounts at the end of the year. A few buyers have been in the market to replenish stocks of special grades, but aside from this hand to mouth trade there have been no transactions of importance. Wool waste has shared in the general depression. Prospective buyers have been sampling stocks offered, but have not placed orders except for very small quantities. The slackening of trade abroad has caused a holding back of orders for American rags. The fact that a new tariff went into effect on January 1st has been an important factor in the market, causing manufacturers to delay as long as possible placing orders for stock, their policy being to wait developments under the new

conditions that will begin with 1914. We quote as follows:

SHODDIES AND EXTRACTS

White yarn, best all wool	46-49
White knit, all wool, best fine	30-40
White, knit, No. 2	23-30
Light yarn, extra fine	35-36
New pure indigo blue	24-27

Merino

Fine light, all wool	20-22
Medium light, all wool	19
Fine black, all wool	17-19
Fine dark, all wool, best grade	18-20
Medium dark, all wool, No. 2	14-16
Red knit stock, strictly all wool	20-24
Red flannel, all wool	19-22
Dark blue for hosiery, strictly all wool, No. 1	20-22
Dark blue for hosiery, not all wool, No. 2	13-15

NEW WOOLEN RAGS

Fine merchant tailors	6-8
Choice light colors	7-8½
Browns	12
Blacks	6
Blues	9½
Fine dark	7-12
Medium dark	4-5

Serges

Black	9½
Blue	10-11

Flannels

Very light	17-18
Mixed	10-11
Black	7-8

SOFTS AND KNIT STOCK

Soft woolens, best	5-6
Old white flannels	11-14
Old red flannels	10-11
Old blue flannels	3-5
Old plaids	4
White stockings	20-24½
Clear dark hoods	7-8½
Light hood stock	13-14

MILL NEWS

Pennsylvania, Philadelphia. Harry Sarfert, formerly engaged in the knitting business in this city, reports that he is about to start up a plant within a short time on a line of men's half hose. The plant will probably be located in the vicinity of Kensington and Allegheny Ave., where his father is already engaged in that line of business.

Pennsylvania, Philadelphia. Curtis P. Graupner has recently placed an order for the equipment of a plant for the manufacture of men's and women's seamless hosiery, 200 and 220-needle goods, which will consist of 40 knitters, 4 ribbers 6 loopers and 2 sewing machines. The production will be sold direct. In addition to buying 44s and 30s C. P. and 2/50 lisle yarns they will also buy hosiery in the grey from other manufacturers. The plant will be located at Orianna and Bristol Sts.

Announcement to Woolen Manufacturers

The firm of D. Kaplan & Co., dealers in new Woolen Rags, dissolved partnership November 26, 1913.

Mr. Louis Kaplan, who for thirty years was the purchasing power of the firm, has organized a new company known as THE KAPLAN WOOL STOCK CO., INC., and is its president.

Mr. Louis Kaplan is looked upon as the most scientific assorter and blender of new woolen clips in America to-day. It is to your interest to avail yourself of his expert knowledge and advice in the selection of your new woolen clips.

There is no organization better fitted to take care of your requirements intelligently; none better able to quote you more attractive figures on clips, and if our quotations are not below others, the greater value will be app rent in QUALITY, ASSORTMENT and in BLENDING.

Let us figure on your requirements, whether for standard assortments or special blendings. You will find us experts in the art, and for this reason you should consult us before purchasing.

YOU AS A MANUFACTURER SHOULD BE THE FIRST TO CONSIDER WHERE YOU CAN GET THE MOST FOR YOUR MONEY—BOTH IN MERCHANDISE AND SERVICE.

WE CAN SHOW YOU.

If you are not in a position to take up this matter with us at this time, you will do so eventually, but DON'T DELAY, FOR IT WILL BE TO YOUR ADVANTAGE TO COMMUNICATE WITH US NOW.

The Kaplan Wool Stock Co., Inc.

LOUIS KAPLAN, President

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It is a well-known fact among manufacturers of silks and silk-mixture goods that Cheney Silk Yarns meet the highest demands for quality and uniformity.

Our unusual manufacturing facilities (the Cheney Yarn Mill being the largest of its kind in the United States) enable us to fill promptly all orders for all standard silk yarns, both spun and reeled, organzines and trams, doubles and singles.

A specialty is made of supplying silk yarns to individual orders for every manufacturing purpose.

Samples and quotations on request.

Cheney Silks are of superior quality, and include practically every kind of goods made of silk—whether for dresses, millinery, decoration or upholstery, the haberdasher or manufacturer, man or woman.

CHENEY BROTHERS
Silk Manufacturers
4th Avenue and 18th Street, New York

National Silk Dyeing Co.

Main Office, PATERSON, NEW JERSEY, 140 Market Street

NEW YORK SALESROOM, 60 UNIVERSITY PLACE

Skein Silk Dyeing of every description for every class of textile manufacture.

Hosiery Dye—Boil-off, weighting and dyeing, treated especially to meet the requirements of the hosiery and knitting trade.

Piece Dyeing and Finishing—All silk and silk mixed goods.

Printing—Surface and warp printing.

WORKS:

Paterson, N. J. Dundee Lake, N. J. Allentown, Pa. Williamsport, Pa.

THE SILK MARKET

The silk market at the present time is in an erratic condition so far as prices go. This is owing somewhat to the conditions in the European silk districts and the amount of the raw product being used. In Yokohama it is stated that, while there is a fair supply of silk on hand, they are holding it for higher prices which they expect will come in January. In the past three weeks, raw silk has shown an advance in price of at least 5 per cent. The silk manufacturers' stock of the raw product is somewhat depleted.

In Canton the supply is reported as being very short. This is owing to the fact that so much silk was exported and so much was used in the European silk districts. There is quite a little Canton silk still in the market, but this supply is very much depleted.

In Milan and Lyons the market is very strong and business reported good, manufacturers running their mills to full capacity.

The silk manufacturers in this country are reported busy on both broad and narrow goods. Now that the strike in Paterson is settled much silk will probably be bought in January by Paterson mills.

The dry goods trade reports the silk business very good. In broad silks the call seems to be for satins, plaids, crepe meteors and pattern meteors. The last named product has a large demand, which is likely to last for some time to come. There is still a good demand for velvets and soft finished silks. The retailers believe that the spring business for 1914 will be better than last year.

The manufacturers of velveteens report a good business. This product is likely to be quite popular the coming year. Broad silk ribbons are having a good sale and manufacturers are very busy.

The cotton manufacturers, while not buying much raw silk, will probably use a large quantity the coming year. As to the knitting manufacturers, it is yet too early to say how much of the raw product will be used, but it can be safely stated that the hosiery mills will again be buying in a short time.

All in the silk industry seem to look hopefully to the future and believe that there will be a good demand for the finished product.

Below are prices current:

European

Grand Extra Classical Piedmont 12/14	4.95-4.97½
Extra Classical Italian 12/14 12/16	4.65-4.67½
Classical Italian 13/15 24/26	4.55-4.57½
Best No. 1 Italian 13/15 24/26	4.50-4.52½

60 days' basis.

Japan

Filature Kansai Extra Extra 13/15	4.15-4.20
Filature Kansai Extra 13/15	4.00-4.05
Filature Shinshu Extra 13/15	4.00-4.05
Filature Kansai Best No. 1 13/15	3.90-3.95
Filature Kansai No. 1 13/15	3.85-3.87½

VILLA, STEARNS COMPANY
Telephone, 6174 Gramercy
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221 Fourth Avenue, New York
RAW AND THROWN SILK
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MANUFACTURERS OF THROWN SILKS
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PATERSON OFFICE, 49 HAMILTON ST. 'PHONE 2159 PATERSON
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MILLS:
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Fast Dye Organzines for Woolen Manufacturers a Specialty

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No. 167 Ward Street, Paterson, N. J.

ADDRESS ALL CORRESPONDENCE TO NEW YORK OFFICE,
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All Frames Equipped with Latest Improvements, Particularly W. & R. Oscillating Reed Motion,
The Latter Assuring Complete Relief to Strain on Silk

GOODS FULLY INSURED BY FIRE. PROMPT SERVICE GUARANTEED.

Raw Silk Warping a Specialty.

Filature Shinshu 13/15	3.75-3.77½
Rereels No. 1 13/16	3.90-3.95
Rereels No. 1 1/2 13/16	3.85-3.87½
Rereels No. 1 1/2-2	3.80-3.85

6 months' basis.

China

Canton XXA 14/16	3.65-3.70
Canton XXB 14/16	3.50-3.52½
Tstalee Blue Dragon and Flying Horse	3.35-3.40
Tsatlee Kun Kee Mars No. 1	2.95-3.00
Tussah Filature Eight Cocoon No. 1-2	1.57½-1.62½

6 months' basis.

SPUN SILK

The business in this industry is reported very good. There seems to be no let-up of the demand for this product. One large spun silk manufacturer said that business was booked for at least four months ahead even at present prices. There seems to be no likelihood that prices will advance for some little time to come. The prices follow:

60/2	3.70
50/2	3.60
40/2	3.50
30/2	3.35
20/2	3.25
10/2	3.15

ARTIFICIAL SILK

The artificial silk manufacturers report business rather dull. They think, however, that the business will improve soon. Below are prices current in which no change can be noted from our last report:

150 Deniers First Quality European	1.95
150 Deniers Second Quality European	1.85
150 Deniers English A.,—Bleached	1.95
150 Deniers English B.,—Bleached	1.83
150 Deniers English C.,—Bleached	1.70
150 Deniers Elberfeld Raw	1.73
150 Deniers Chardonette Natural	1.85

MILL NEWS

*Pennsylvania, Coatesville. Some changes are being made in the equipment of the Ashley & Bailey plant by S. J. Aronsohn, Inc., who are now in possession of the property. Some old looms are being broken up and will be replaced with new looms. New warpers, winders and quiller-coppers have been installed.

Pennsylvania, Easton. The roof has been put on the addition being erected for the Stewart Silk Company and the building will soon be ready for occupancy.

*Pennsylvania, Easton. Construction work has been completed on the new addition to the plant of the Easton Silk Company and the machinery equipment is being installed. Sixteen broad silk looms are on the floor and more are expected shortly. This addition is 2 stories, 53 by 212 feet.

SPUN SILK
YARNS FOR ALL PURPOSES
AMERICAN SILK SPINNING CO., PROVIDENCE, R.I.

MINDLIN & ROSENMAN
Importers and Manufacturers of
Our Specialty:
DYED SILK FOR THE KNITTING TRADE
on cones and tubes
RAW and THROWN SILK, ARTIFICIAL SILK
Mercerized and Cotton Yarns, Yarns and Threads
131 Mercer Street, New York
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WILLIAM RYLE & CO.,
FOREIGN AND DOMESTIC
SPUN SILK YARNS and NOILS
Domestic Thrown Silk of every description. Fine Pure Dye Silks for the woolen trade a specialty. Importers of European and Asiatic Raw Silk.
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Raw, Thrown and Dyed Silks

Silk on Quills or Beams. Hosiery Silk on Cones

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"Cascami"

Schappe, Spun Silk, Cordonnets for Sewing in Skeins—on Cops—Spools —Cones—Beams.
In Gray or Dyed.
Special attention to regularity of sizes.

A. P. Villa & Bros.

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Cotton, Wool and Silk Conditioning
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NEW YORK
D. E. Douty, Mgr. F. G. Boye, Supt. K. B. Lamb, Chem. Eng.

SILK MILL SUPPLIES

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Also Power Transmission Supplies for General Mill Use

I. A. HALL & CO.
Paterson, N. J.

Allentown Reed, Harness and Mill Supply Co.
Allentown, Pa.

EMPIRE MILL CRAYONS

"BEST BY TEST"

THE AMERICAN CRAYON CO.

Waltham, Mass. and Sandusky, Ohio

SILK MILL NEWS

Pennsylvania, Johnstown. A quantity of new machinery has just been received by the Buser Silk Co., Inc., and will be set up at once. The company has purchased the mill in which it is located and now occupies three floors.

*New Jersey, Paterson. A plant is being established at Fifth Ave., corner of Wait St., by the Werbro Ribbon Mfg. Co., recently reported incorporated under the laws of New York with capital stock of $50,000. Manufacturing will begin about January 1 with equipment of 50 looms on silk ribbons. J. Abberley Sandford is president; Leon G. Wertheimer, treasurer, and L. Seifer, superintendent. Wertheimer Bros., 19 E. 24th St., N. Y., will sell the product.

New Jersey, Paterson. The Daisy Silk Throwing Company is a new concern just starting in the Hamilton Mill on Mill St. William Lorimer and others are interested.

*New Jersey, Paterson. The new mill to be built by F. C. Reinhardt, a manufacturer of braids and laces at 93 Belmont Ave., will be located at Bond, Gray and State Sts. It will be a 4-story structure, 60 by 200 feet, of brick, and will cost about $48,000. According to report this new mill will be rented to a local concern which will install about 400 looms.

Pennsylvania, York. The Franklin Silk Mills, with B. Edmund David as proprietor, and Sam Rutland as superintendent, are equipping a new factory building at Dewey and Poplar Sts. with 220 looms which they will operate on broad silks and tie goods, selling the production through New York.

*Illinois, Chicago. Work is being started on the projected additional factory for Oscar Heineman, Inc., and the enlargement will be five stories high and basement, 100 by 150 feet, connected with the present building by a tunnel under the street. Silk floss, tram, twist, etc., are manufactured and the equipment will be increased to 55,000 spindles.

*New Jersey, Paterson. Additions to the equipment of the Standard Broad Silk Works, which will be made the latter part of the month when the concern moves from the Addy Mill to the Rheinhart Mill, will consist of 28 new looms and 192 spindles. This will give a total equipment of 500 spindles and 80 looms, making broad silks of all kinds. Abraham Nussbaum is buyer.

New Jersey, Paterson. A 4-story brick mill is being built for the Goldy Ribbon Company by the P. S. Van Kirk Company. The Goldy Ribbon Company manufactures silk ribbons on present equipment of 36 looms.

*Pennsylvania, Bangor. A 2-story addition, 60 by 75 feet, is being built to the plant of the Pennsylvania Silk Company, manufacturers of broad silks, and the equipment will be increased from 90 looms to 160 looms. The Pennsylvania Silk Company is a merger of the Bangor Silk Company of Bangor, and the Reliance Silk Company of Paterson, N. J., and has capital stock of $36,000, fully paid up. L. B. Flory is in charge of the plant.

SILK MILL NEWS

Pennsylvania, Bangor. The Sterling Silk Glove Company, manufacturers of silk gloves and mittens, contemplate increasing the number of their machines. They report business is very good in their lines.

*Pennsylvania, Catasauqua. The extension being built on the plant of the Wahnetah Silk Company is nearly completed. This enlargement gives space for about 250 looms. The company is giving consideration to a plan for the erection of a 2-story building to be equipped as a hospital.

*Pennsylvania, York. The Acme Hosiery Company have removed from their old quarters to the new 2-story and basement brick mill which has been under construction for several months. The factory is 40 by 100 feet, 2 stories and basement, with power house, 30 by 40 feet, and is equipped for steam and electric power. This concern manufactures 144-needle seamless half hose, and increases will be made in the equipment which will give a total of 60 knitters and 80 ribbers.

*Tennessee, Maryville. The recent increase in the equipment of the Maryville Hosiery Mills gives total equipment of 150 knitting machines, an increase of 33 per cent. in the past year.

*Vermont, Bennington. Six more knitting machines are to be added by the new Bennington Hosiery Co. and further additions to equipment will be made from time to time. As noted previously, this new concern has purchased the mill formerly operated by Tiffany Bros. Worsted and worsted merino half hose are manufactured. Henry L. Field is vice-president, manager and buyer.

*Wisconsin, Merrill. It is reported the Merrill Knitting Co., which has just moved into a new three-story mill, will add equipment which will triple the capacity of the plant. Five machines have already been ordered, and an additional order for five more machines will soon be awarded.

*Kentucky, Paducah. The new Paducah Hosiery Mill will begin manufacturing about the first of the year making misses' ribbed hosiery, selling the product in the grey. A charter has been secured with capital stock of $12,000. The equipment at the start will consist of 30 ribbers and 20 knitters. R. E. Hearne is president; H. M. Childress, secretary and treasurer; and E. O. Davis, inventor of the "Davis" looper, manager.

*North Carolina, Connellys Springs. Manufacturing was started December 22 by the new Connellys Springs Knitting Mills Company making men's and women's hosiery. This company, which is headed by D. B. Mull, formerly of Drexel, bought a water power on the South Fork River four miles from the plant and will develop about 200 h. p. next spring. About $6,000 to $10,000 will be the cost of this improvement. For the present the plant is operated by steam. The Connellys Springs Knitting Mills Company has capital stock of $100,000 and took over the knitting department of the Ethel Cotton Mills at Selma. D. B. Mull is president, treasurer and buyer, and J. A. Matthews is superintendent.

If you want

Splendid Garnetted Stock

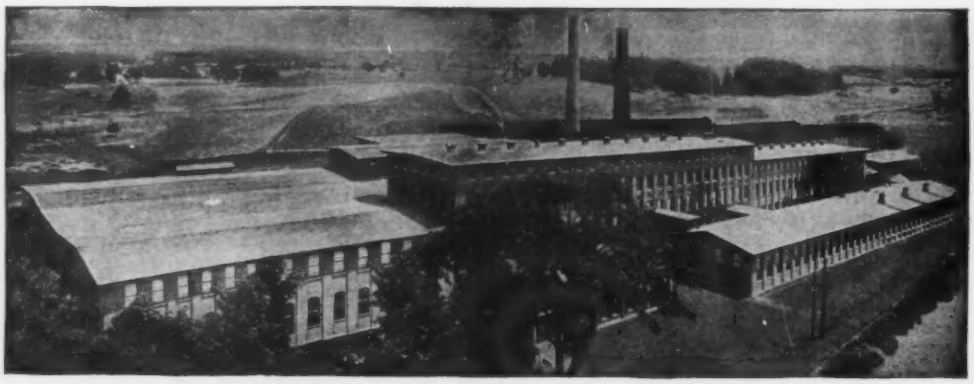
made of
Cotton, Wool or Silk,
the finest the market
affords, made by men
who are "KEEN"
after the work—who
delight in doing it right—
Then write GRAVES
for samples.

Frank B. Graves Co.
34 Arch Street, Albany, N. Y.

The Metallic Drawing Roll Co.
INDIAN ORCHARD, MASS.
MANUFACTURERS OF
Metallic Rolls

Especially adapted for Cotton Mills. 25 to 33 per cent more Production Guaranteed. Weight Reduced 33 to 50 per cent. No Leather Covering Bill.

WRITE FOR PARTICULARS



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Sheetings, Shirtings, Lawns, India Linons.
Everything in White Goods.
Capacity, 30 Tons Daily

JOHN MacMANUS, Manager — CHADWICKS, N. Y.

For Perfect and Economical Results in Speck Dyeing Worsted Piece Goods, use
CRYSTAL SPECK DYE
Covers all vegetable and other specks.
Does not stain white silk threads in goods.
Worden Chemical Works
4 Cedar Street, New York

SAVOGRAN
Cleans Wool, Floors, Anything
INDIA ALKALI WORKS, - BOSTON

The Chicago Portable Watchman's Clock
Approved by the National Board of Fire Underwriters and accepted by all Insurance Companies
The Perfection of Watchman's Detector Service
Simple, Efficient, Tamper-proof, Durable
WATCHMAN'S CLOCK AND SUPPLY CO.
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You Save Enough Insurance to Pay for the Equipment
So it costs you NOTHING to have the AMERICAN WATCHMAN'S CLOCK. Fully approved by all insurance companies. We equip factories with Fire Alarms, Signals, etc., also Employee's Time Recorders, and Telephone Systems. Electric Time System consists of Master Regulator in office with secondary electric clocks throughout the mill, insuring accurate time. Send for particulars.
Pettes & Randall Co., 150 Nassau St., New York

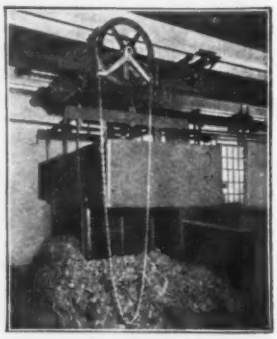
RAW WOOL DYEING

Repeat orders are unquestioned endorsements. Secure our references and write them.

Even coloring is no longer the greatest problem in dyeing raw wool.

The waste account and injury to the stock are most important.

Of course, the condition of your stock is satisfactory, but is it equal to your competitors'? What about your cost of dyeing, compared with theirs?



Patentees and Manufacturers of Hussong Dyeing and Bleaching Machines
HUSSONG DYEING MACHINE CO. Groveville N. J.

FIRE, LIGHTNING, WINDSTORM.

The HOME INSURANCE COMPANY NEW YORK

Elbridge G. Snow, President

Organized 1853 MAIN OFFICES, 56 CEDAR ST.

Cash Capital, $3,000,000

INDEMNITY
For Loss of
Profits
Commissions
Use and
Occupancy
on acceptable
Protected Plants
at the
Minimum Rate

ASSETS January 1, 1913	$33,406,434.60
LIABILITIES (Except Capital)	14,254,679 00
SURPLUS AS REGARDS POLICY HOLDERS	19,151,755.28
Losses Paid Since Organization over	139,000,000.00

IS prepared to entertain liberal lines on Sprinkler-Equipped and Modern Improved risks generally, having a special department for the consideration of such business.

OWNERS OR TENANTS may have for the asking proper advices in relation to the FIRE HAZARD and the Value of Automatic Sprinkler and other protection for the manufacturing or distributing plant. Correspondence invited by the

DEPARTMENT OF IMPROVED RISKS
56 CEDAR STREET, N. Y.

DYESTUFFS AND CHEMICALS

Acetic, 100 lbs.	2.16-2.56
Citric, domestic	35½
Copperas	65-80
Oxalic	8-9
Sulphuric, 66°, 100 lbs.	1.00-1.25
Muriatic, 18°	1.15-1.65
Tartaric crystals	30-33

Miscellaneous Chemicals and Dyestuffs

Acetate of lime, gray, 100 lbs.	2.50-2.60
Alum, lump	1.75-1.90
ground	1.85-2.00
powdered	3.00-3.15
Aqua ammonia, 26°	2-6
Borax	3-5½
Cream tartar, crystals	23½-25
Fuller's earth, powdered, ton	18-20
Glauber's salt	75-85
Potash, chlorate, crystals	8-9
powdered	9-14½
carbonate	3-6½
Soda, bicarbonate	1.15-1.50
Soda, caustic, domestic, 60 per cent.	1.80-1.91
Sal., American	65½-85½
Vitriol, blue	4.76-5.00
Acetate of soda	4-6½
Acid, picric, best crystals	70-75
tannic, commercial	36-37
Albumen, egg	42-65
blood	22
Aniline, oil	9½
salt crystals	8½-9½
Alizarine	15-16
Bichromate of potash, American	7-8½
Bichromate of soda	4-7
Bisulphite of soda	75-1.25
Cutch, bales	5-8
Dextrine, imported potato	4-7½
Divi-divi, ton	33-47

MILL NEWS.

Canada, Ontario, Alton. Alex. Dick & Sons, manufacturers of knit goods of this place, have installed additional machinery.

Canada, Ontario, Georgetown. New Knitting machines for knitting cuffs and linings are being installed in the plant of H. T. Arnold & Sons, manufacturers of mittens and gloves.

Canada, Ontario, Glen Williams. Increases have been made in the equipment of Joseph Beaumont, manufacturer of hosiery, mittens and gloves, which includes the addition of new winders and a new hydro-extractor.

Canada, Ontario, Kingston. New equipment including 27 cylinders for knitting underwear, 10 hosiery knitting machines, and 3 40-spindle winders has been added to the plant of the Kingston Hosiery Co., Ltd. A further installation of hosiery and underwear knitting machines will be made early in 1914, and some sewing machines also will be installed.

Canada, Quebec, Hull. Additional knitting machinery has been installed in Hanson's Woolen Mill, George E. Hanson, proprietor, during the past month.

The WM. H. LORIMER'S SONS CO.,

MERCERIZERS AND DYERS

Manufacturers of

MERCERIZED YARNS

FOR ALL PURPOSES

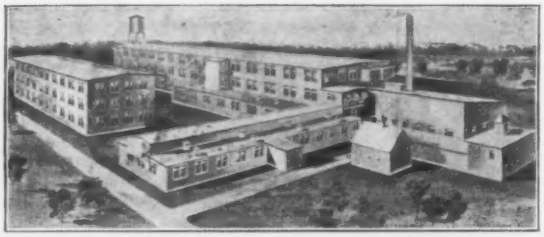
ONTARIO AND LAWRENCE STS., PHILADELPHIA, PA.

Skeins, Cones, Tubes and Warps

Western Representative,
E. G. HARPER,
701 Medinah Bldg., Chicago, Ill.

PETER B. MCMANUS, Pres. and Treas. EDWARD J. McCAUGHEY, Secy. and Mgr. JOHN McMANUS, Vice-Pres

HOME BLEACH AND DYE WORKS, Inc.



DYERS, BLEACHERS AND MERCERIZERS OF

COTTON YARNS

IN SKEIN, AND LONG AND SHORT

CHAIN WARPS

FAST COLORS A SPECIALTY

Daily Capacity 20 Tons

FAST COLORS AND BLACK FOR WORSTED TRADE

Office and Works, Pawtucket, R. I.

ESTABLISHED 1881

GLOBE DYE WORKS CO.,

Successors to R. Greenwood & Bault

DYERS BLEACHERS AND MERCERIZERS

OF COTTON WARPS AND SKEIN YARNS

Globe Bleach and Dye Works,
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English Calender Roll Papers

For Embossing and Other Calenders.

Chas. A. Johnson & Co.

Sole Agents for America

55-57 Franklin Street, - New York

THE PEERLESS COMPANY

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FOR ALL TEXTILE PURPOSES

Fast Colors on Silk for Worsted Manufacturers

Pure Dye and Weighted. Bright and Souple.
Dyers of Peerless Black on Artificial Silk.

JOHN F. DAVIDSON

(ORIANNA BLEACH WORKS)

BLEACHER

Of Turkish Towels, Cotton Yarns, Underwear, Cotton Hosiery and Tapes.

2558-2564 North 3rd St. 2557-2563 Orianna St., PHILADELPHIA
Office, 2557 Orianna Street. Correspondence Solicited.

HOPKINSON DYEING AND TEXTILE WORKS

MERCERIZERS

Dyers and Bleachers of Skein Yarns. Twines and all Narrow Fabrics. Printers' Knotting Cords a specialty, on tubes or balls (our Fast Black will please you).

T. HOPKINSON, Prop'r and Mgr. G. W. HOPKINSON, Supt.

Office and Works, 259 Forest St., FALL RIVER, MASS.

DYERS of all kinds of YARNS

For Manufacturers of: Men's Wear, Dress Goods, Carpets, Rugs, Upholstery, Hammocks, Shoe Goring, Webbing, Gas and Electric Tubing, Braids and Novelties. Better work, prompter, better service than you get elsewhere.

T. BROPHY'S SONS, Jasper St., above Clearfield St., Established 1845 **PHILADELPHIA, PA.**

MILL NEWS

Massachusetts, Wakefield. A small addition is to be built for Winship, Boit & Company, proprietors of the Harvard Knitting Mill, to be used for office purposes.

Minnesota, Fergus Falls. The Fergus Falls Knitting Works will operate the small woolen mill of J. G. Durrell who has conducted a carding business. An addition is being built to the plant.

*Michigan, Muskegon. The increase recently reported at the Muskegon Knitting Mills, Louis P. Haight, proprietor, refer to the equipment of the addition built a year or two ago. This department manufactures wool yarn, men's, women's and children's hosiery, mittens and leggings, all wool goods.

New Jersey, Camden. Plans and specifications are being prepared for the General Gas Mantle Co., 4th and Jefferson Sts., for a three-story brick and concrete fireproof building, to be erected for the purpose of enlarging their present plant. They are manufacturing incandescent gas mantles with 11 knitters.

New Jersey, Hackettstown. The plant of John Ashley Hosiery Company, manufacturers of silk hosiery, is being improved.

*New Jersey, Montclair. The new plant of the New Jersey Textile Art Corp., which will move here January 1, is on Pine St. and is being equipped with 50 knitting machines and 5 sewing machines to be operated by electric power. This concern has capital stock of $20,000. Oswald Schenke is president and treasurer; C. Schenke, agent,, and Ed. M. Schenke, superintendent and buyer.

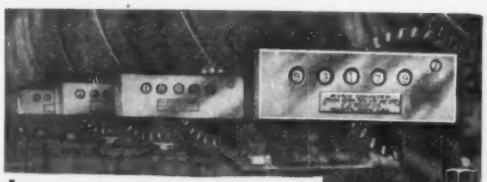
New York, Brooklyn. Following the incorporation of the business of the Nassau Knitting Company, the equipment is to be largely increased to give a total of 70 flat and circular knitting machines and 25 sewing machines. The address is 164 Atlantic Ave.

New York, Brooklyn. The Progressive Knitting Works, Rubenstein Bros., proprietors, have established an annex for manufacturing bathing suits at 424 South Fifth St. The main plant will be continued at 122 Leonard St., where lines of sweater coats will continue to be manufactured.

New York, Gloversville. George H. Holmes, 16 Lincoln St., a manufacturer of silk nets, veilings, and all kinds of warp knit fabrics in silk, has added six more knitting machines, making fourteen in all.

*Massachusetts, South Framingham. The equipment of the cotton underwear plant of Brown Durrell Company is now 36 knitting machines and 45 sewing machines. A bleaching department and extensive additions have been made in the past year.

New York, New York City. The Schwartz Knitting Mills, 141 W. 36th St., will move into larger quarters as soon as a desirable location is found. The present quarters are too small for the requirements of the business.



Roco Counters

COUNTING THE YARDS ON

Braiding Machines

This shows but one of Innumerable ways in which our Counters can be used for accurately measuring and counting the production of a machine.

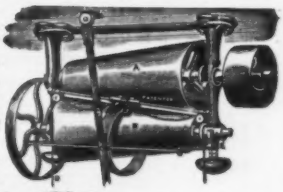
We have a variety of Counters for textile mill uses. Ask for "Catalog 18."

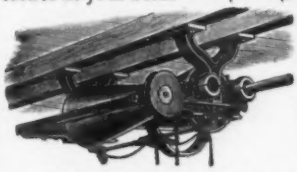
The C. J. ROOT CO., . BRISTOL, CONN.

Variable Speed Countershafts

The Evans Friction Cone Pulleys will drive your machines at any desired speed from 1 to 6 by simply pulling a cord.

They are guaranteed to do your work.





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Over Ten Thousand Sets in Operation in this Country and Europe.

Send for Catalogue.

EVANS FRICTION CONE COMPANY

G. Frank Evans. Newton Center, Mass.

Eureka Fire Hose

Cotton Mills, Woolen Mills, Knitting Mills and Factories need positive protection instantly available. Eureka Hose gives protection.

"Eureka" has the lasting quality and the capacity to resist wear and tear.

Fire Hose for every possible duty.

Eureka Fire Hose Mfg. Co.

NEW YORK

Barrett Specification Roofs

If you should specify merely "a five ply tar-and-gravel roof" instead of a "Barrett Specification Roof"—

You ***might*** get as good a roof as a Barrett Specification Roof though built somewhat differently—

But on the other hand, you may get materials of uncertain qualities,—

Or a roof with little or no pitch between the layers,—

Or a scanty surface coating of pitch and gravel—

And you wouldn't know about it until a few years later—***when the roof leaked***—

But if you put the Barrett Specification into your building specifications and see that it is carried out, you are sure—

1. That the materials will be right,
2. That they will be used in the right amount and in the right way,
3. That your roof will last upwards of twenty years without another cent of expenditure,
4. And that the cost per foot per year of service will be lower than it could possibly be with any other kind of roofing.

As Barrett Specification Roofs cost less than any other permanent roof to begin with and as their maintenance cost is nothing, the unit cost comes down to about ¼c. per square foot per year, a figure unapproached by any other roof covering.

Copy of the Barrett Specification with tracing ready for incorporation into your building plans, sent free on request. Address nearest office.

Special Note We advise incorporating in plans the full wording of The Barrett Specification, in order to avoid ny misunderstanding. If any abbreviated form is desired, however, the following is suggested.

ROOFING—Shall be a Barrett Specification Roof laid as directed in printed Specification, revised August 15, 1911, using the materials specified, and subject to inspection requirement.

BARRETT MANUFACTURING COMPANY

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New York Chicago Philadelphia Boston St. Louis Kansas City Cleveland Cincinnati Minneapolis Pittsburg Seattle Birmingham

The Paterson Mfg. Co., Ltd:—Montreal Toronto Winnipeg Vancouver St. John, N.B. Halifax, N.S Sydney, N.S.

Barrett Specification Roof on Clyde Line Steamship Co. Buildings, Jacksonville, Fla. John Monks & Sons, Engineers.

MILL STOCKS

FALL RIVER MILLS

	Bid.	Asked.	Last Sale.
American Linen Co.	...	70	65
Arkwright Mills	...	70	...
Barnard Mfg. Co.	...	...	...
Bourne Mills	...	110	...
Border City Mfg. Co.	...	100	...
Chace Mills	...	102½	...
Charlton Mills	...	...	...
Cornell Mills	...	...	...
Davol Mills	85	...	...
Davis Mills	85	87½	...
Flint Mills	...	97	...
Granite Mills	...	...	...
Hargrave Mills	...	...	...
King Philip Mills	...	110	...
Laurel Lake Mills	115	120	...
Lincoln Mfg. Co.	...	90	...
Luther Mfg. Co.	...	...	...
Merchants' Mfg. Co.	...	88	...
Mechanics' Mills	90	...	...
Narragansett Mills	105	...	103
Osborn Mills	...	103	...
Parker Mills	...	50	...
Pocasset Mfg. Co.	...	100	...
R. Borden Mfg. Co.	117½	...	...
Sagamore Mfg. Co.	168	...	...
Seaconnet Mills	...	63	...
Shove Mills	71	75	...
Stafford Mills	...	80	...
Stevens Mfg. Co.	...	120	...
Tecumseh Mills	100	103	...
Troy C. & W. Mfg.	...	...	...
Union Cot. Mfg. Co.	...	...	...
Wampanoag Mills	...	85	83
Weetamoe Mills	...	87	...

OTHER NEW ENGLAND MILLS

	Par Value.	Last Sale.
Amoskeag Mfg. Co., com., N. H.	100	60
Amoskeag Mfg. Co., pfd., N. H.	100	99
Androscoggin Mills, Me.	100	135¼
Arlington Mills, Mass.	100	82
Appleton Co., Mass.	100	172
Atlantic Cotton Mills, Mass.	100	40½
Bates Carpet Co., Me.	100	252½
Bigelow Carpet Co., Me.	100	150½
Boott Mills	100	98⅛
Boston Duck Co., Mass.	700	1350
Boston Mfg. Co., Mass.	100	105¼
Cabot Mfg. Co., Me.	100	120
Chicopee Mfg. Co., Mass.	100	90
Continental Mills, Me.	100	75
Dwight Mfg. Co., Me.	500	1002½
Edwards Mfg. Co.	100	99
Essex Co., Mass.	100	190
Everett Mills, Mass.	100	110
Fisher Mfg. Co., Mass.	100	125⅛
Franklin Co., Me.	100	205
Great Falls Mfg. Co., N. H.	100	176
Hamilton Woolen Co., Mass.	100	95
Hamilton Mfg. Co., Mass.	100	81¼
Hill Mfg. Co., Me.	100	90¼
Jackson Co., N. H.	1000	985
Lancaster Mills, Mass.	100	85
Lawrence Mfg. Co., Mass.	100	150¼
Lockwood Co., Me.	100	103⅜
Lowell Bleachery, Mass.	100	129
Lowell Hosiery, Mass.	100	40
Lyman Mills, Mass.	100	116
Massachusetts Cotton Mills, Ga.	100	93¾
Massachusetts Cot. Mills, Mass.	100	110¼
Merrimack Mfg. Co., com., Mass.	100	25
Merrimack Mfg. Co., pfd., Mass.	100	85
Middlesex Co., Mass.	100	58½
Monadnock Mills, N. H.	1000	1000
Nashua Mfg. Co., N. H.	500	565
Naumkeag Steam Cot. Co., Mass.	100	135
Newmarket Mfg. Co., N. H.	100	95
Otis Mfg. Co., Mass.	1000	1852½
Pacific Mills, Mass.	100	108
Pepperell Mfg. Co., N. H.	100	291
Plymouth Cordage Co., Mass.	100	215
Salmon Falls Mfg. Co., N. H.	300	150
Shaw Stocking Co., Mass.	100	75
Suncook Mills, N. H.	100	80
Thorndyke Mfg. Co., Mass.	1000	1750
Tremont & Suffolk Mills, Mass.	100	99
Waltham Bleachery & Dye Works, Mass.	100	129
York Mfg. Co., Me.	100	85⅛

NEW BEDFORD MILLS

	Bid.	Asked.
Acushnet Mill	135	...
Beacon Mfg. Co., com.	102½	...
Beacon Mfg. Co., pfd.	...	116
Booth Mfg. Co., com.	...	30
Booth Mfg. Co., pfd.	50	...
Bristol Mfg. Co.	...	68
Butler Mfg. Co., com.	...	90
City Mfg. Co.	...	90
Dartmouth Mfg. Co., com.	*120	...
Dartmouth Mfg. Co., pfd.	99	...
Gosnold Mfg. Co., pfd.	87	...
Grinnell Mfg. Co.	...	175
Holmes Mfg. Co., com.	100	...
Holmes Mfg. Co., pfd.	100	...
Kilburn	110	120
Manomet	...	113
Nashawena Mills	59	...
N. B. Cotton Mills Co., com.	100	...
N. B. Cotton Mills Co., pfd.	...	100
Neild Mfg. Co.	...	90
Nonquitt Spinning Co.	90	92
Page Mill	...	76
Pierce Mill	300	...
Pierce Bros., Ltd.	100	...
Potomska Mills	115	...
Quissett Mills, com.	...	95
Quissett Mills, pfd.	95	100
Sharp Mfg. Co., com.	...	80
Sharp Mfg. Co., pfd.	...	102
Soule Mill	...	82½
Taber Mill	...	100
Wamsutta Mills	120	...
Whitman Mills	...	121

* Ex dividend.

SOUTHERN MILLS

	Bid.	Asked.
Abbeville	85	100
American Spinning Co.	155	...
American Spinning Co., pfd.	100	...
Arkwright Mills	...	100
Avondale	120	126

Unproductive Dollars

Spent for gallons of oil which spatter from shafting, goes astray from oil cans, flings off all textile machinery

May Be Saved

endless staining of goods may be obviated, clean workrooms will result by applying

TRADE MARK REGISTERED
NON-FLUID OIL
UNITED STATES PATENT OFFICE

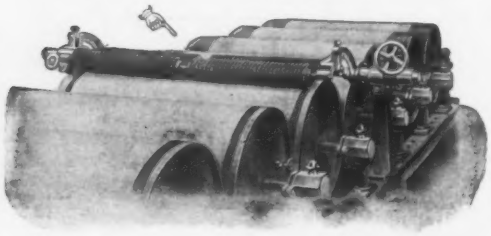
to places now lubricated with fluid oil. Non-Fluid Oil offers many other vital improvements over oil lubrication. They do all that the best fluid oils do except drip and spatter. Ask to be shown at our expense.

Address DEPT. H

New York & New Jersey Lubricant Co.
165 Broadway, New York

The Bristle Cloth Stretcher

RETAINS WIDTH GAINED



Because it stretches the goods where they are beginning to set

SAVES
Time—Labor—Money

AMERICAN FINISHING MACHINERY CO.
141 Milk Street, Boston

Brogon Cotton Mills (new series)	...	81
Brookside	...	112
Cannon	150	...
Cabarrus	150	...
Chadwick-Hoskins	...	80
Chadwick-Hoskins, pfd.	...	101
Chiquola Cotton Mills, pfd.	80	...
Clifton, com.	80	...
Clifton, pfd.	96	100
Clara	100	...
Cliffside	190	...
Clinton	...	120
Columbus Manufacturing Co.	...	85
Darlington	75	83½
Drayton	...	90
Erwin, pfd.	105	...
Easley	...	185
Exposition	...	210
Florence	125	128
Gaffney Manufacturing Co.	59	...
Gibson, com.	110	...
Gluck	...	100
Graniteville, S. C.	140	152
Grendle	...	96
Glenwood	...	150
Highland Park	186	...
Highland Park, pfd.	...	102
Hartsville	175	195
Hartsville, pfd.	...	100
Henrietta Mills	...	141
Inman, com.	...	108
Inman, pfd.	...	100
J. P. King Manufacturing Co.	...	79
Kesler	150	165
Lancaster Cotton Mills	130	...
Lancaster Cotton Mills, pfd.	96	...
Lanet	...	112
Laurens	127	136
Lockhart, S. C.	...	72½
Loray Mills, pfd.	...	96
Modena	...	100
Mollohon	...	101
Monarch, S. C.	115	...
Newberry	125	...
Norris Mills	...	121
Ninety-Six	130	140
Orr	86	...
Ozark	100	...
Parker Mills, com.	10½	20
Parker Mills, pfd.	44	60
Parker Mills, guar.	85	100
Pacolet Mfg. Co., com.	...	103
Pacolet Mfg. Co., pfd.	100	...
Patterson	129	...
Pelzer Manufacturing Co.	125	164
Piedmont Manufacturing Co.	150	167
Pell City, Ala.	...	80
Poe, W. F., Manufacturing Co.	100	103
Riverside Manufacturing Co.	...	78
Roanoke Mills	...	155
Saxon	114	...
Spartan	107	...
Toxaway	...	78
Union Buffalo, 1st pfd.	34	51
Union Buffalo, 2d pfd.	...	10
Warren Mfg. Co., com.	78	...
Warren Mfg. Co., pfd.	...	107
Washington Mills	...	20
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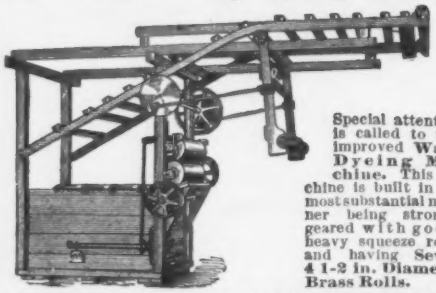

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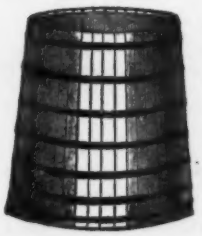

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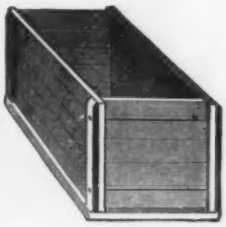

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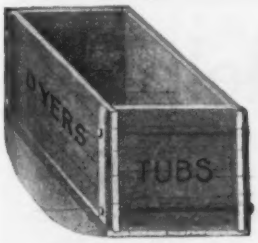

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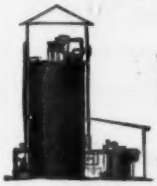

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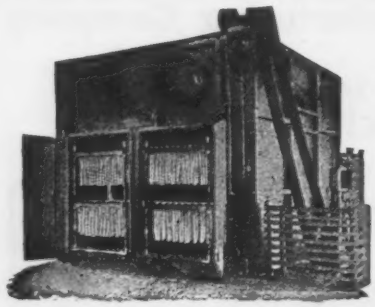

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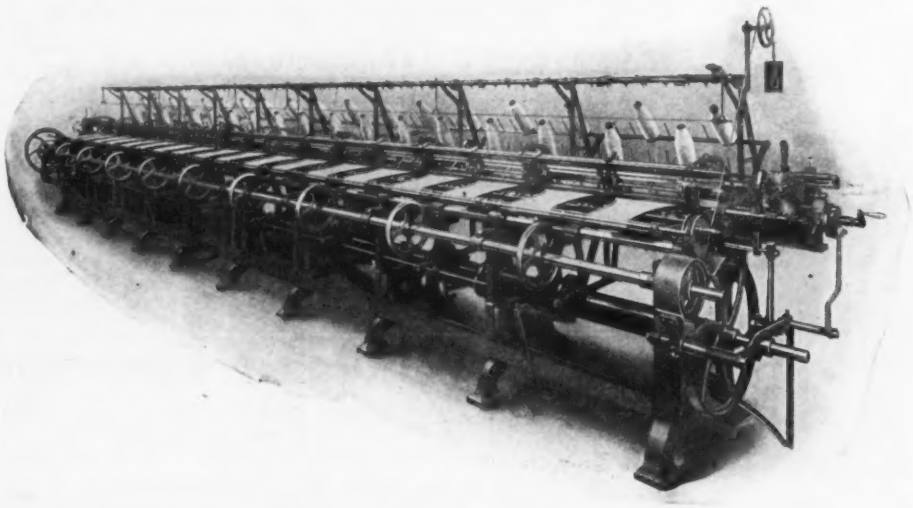

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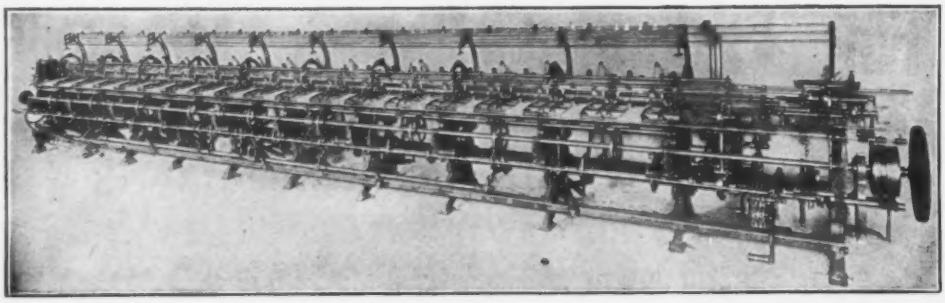

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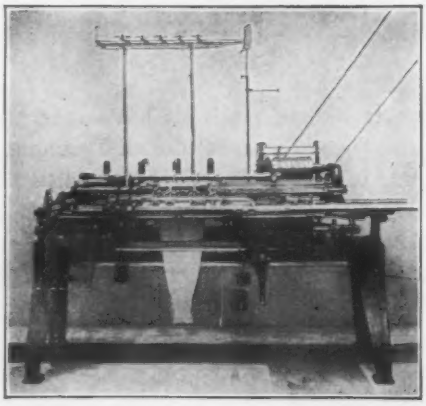

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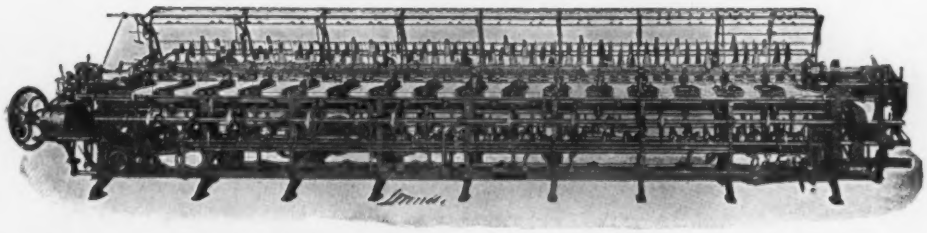

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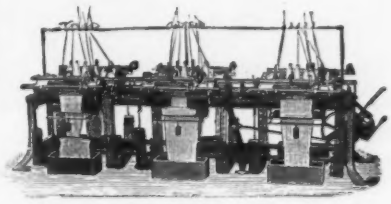

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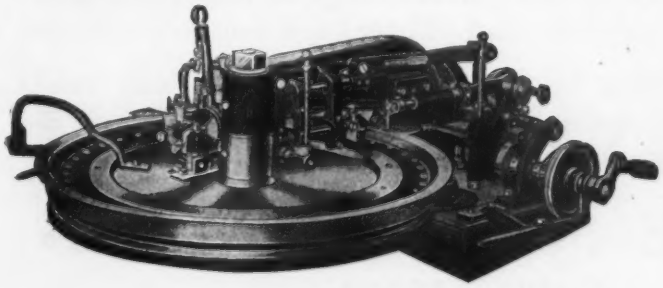

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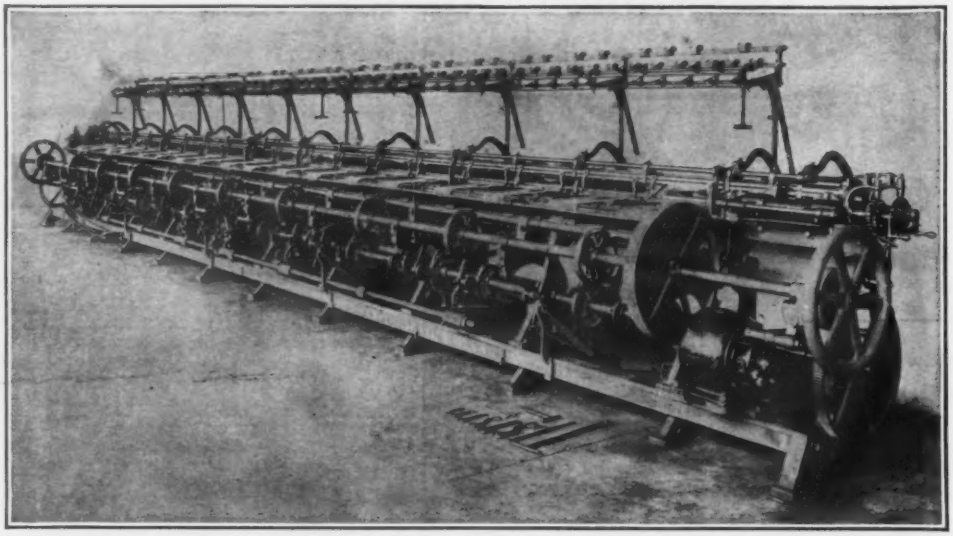

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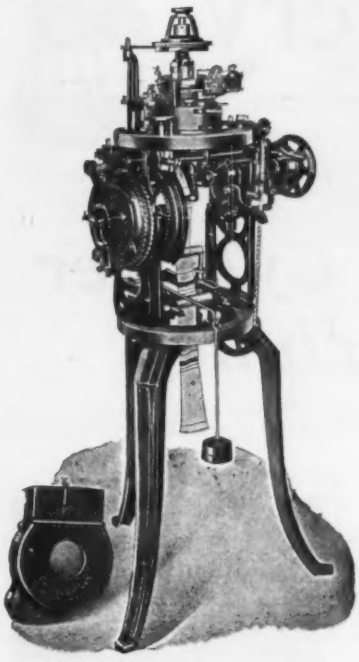


AMONG our other new features are a body machine with revolving cams, instead of revolving cylinder and dial.

This machine is equipped with the dogless attachment, thus eliminating the many troubles due to the use of dogs with which all other American rib machines have to contend.

In addition there is a new friction drive which facilitates starting the machine from either front or back.

Also an improved yarn guide and latch guard.

Wildman Mfg. Co.

Established 1889

Norristown, Pa.

MFG. Co.

Trade Mark

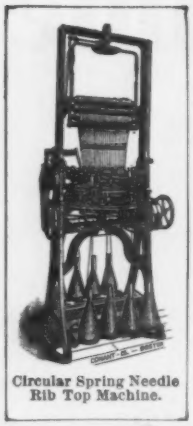
CHARLES COOPER

BENNINGTON, VERMONT.

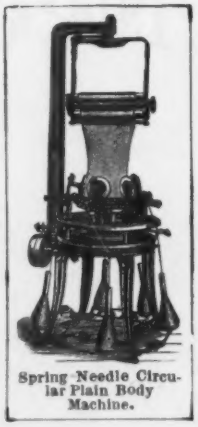
MANUFACTURER OF

Knitting Machinery

Flat and Circular Rib, both Spring and Latch Needle, Plain Circular Machines, Lead or Trick Cylinder.



Circular Spring Needle Rib Top Machine.



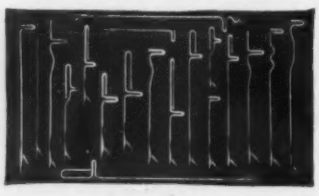
Spring Needle Circular Plain Body Machine.

Spring Needle Cylinder Rib-Top Machines

For making Cuffs, Drawer Bottoms and Shirt Borders.

Spring Needles.

Spring and Latch Knitting Needles, Burr Wheels, Burr Blades, Sinkers, Jacks, Etc.



Latch Needles.

COLLARETTE ATTACHMENT.

AMERICAN REPRESENTATIVE.

G. H. ROGERS,
838 Lancaster St., Albany, N. Y.

EUROPEAN REPRESENTATIVE.

FELIX LEDERER.
Ix/4 Schubertgasse, Nr. 22, Vienna, Austria.

A New "Union Special"

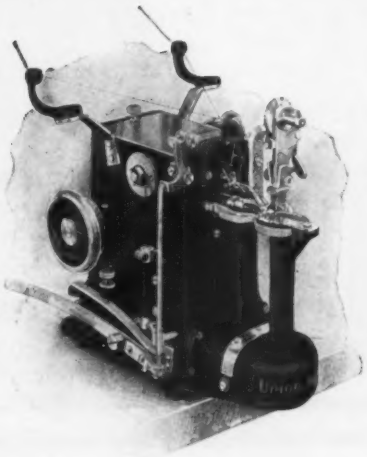
Cup Feed Machine for Seaming Selvage Edge Hosiery

Quiet, Light Running, High Speed

Double Thread Interlock Seam
perfectly flat and non-irritating

Ends of Seams Locked
giving looper finish

Finest Gauge Silk Fabric
To heaviest cotton hose seamed with equal facility



Improved Adjustable Uncurling Device
insuring perfect seam.

Both Feeding Cups Actuated
insuring positive feed upon both selvages, avoiding puckered seam

Quickly Adjustable Stitch Regulator
without interchanging parts.

Union Special Machine Company

HOME OFFICE AND FACTORY
300 W. Kinzie St., Chicago, Ill.

GENERAL EASTERN OFFICE
63-65 Bleecker St., N. Y. City

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Minneapolis, 4 Old Colony Bldg.
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FOR MAKERS
OF TEXTILE AND KNITTING MACHINERY

HIGH GRADE COLD FINISHED STEELS

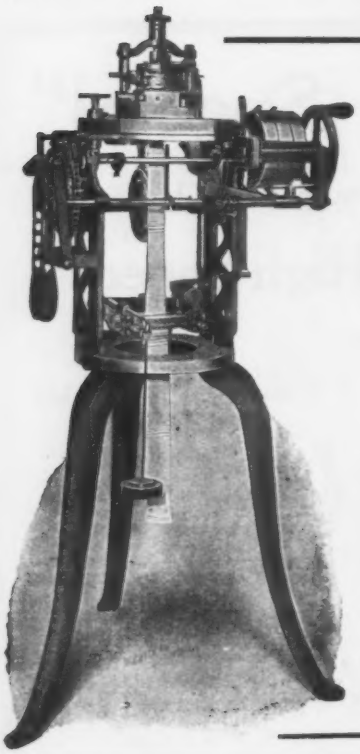
To Temper or Not to Temper. Large and Complete Stock for Prompt Shipment

SEAMLESS STEEL TUBING

Bars, Strips, Sheets, Rods and Wires. Close Forged Cylinder Rings and **Dials.**
Twist Drills. Send for Catalogue "D." Milling Cutters.

FIELD & COMPANY, Inc.

116 North 7th Street **Philadelphia, Pa.**



H. BRINTON COMPANY

213-217 Race Street, Philadelphia, Pa.

BUILDERS OF

Circular Knitting Machinery

of every kind for every purpose

HOSIERY RIBBERS

with Splicing, Striping, Two-speed, Selvage Welt and French Welt Attachments.

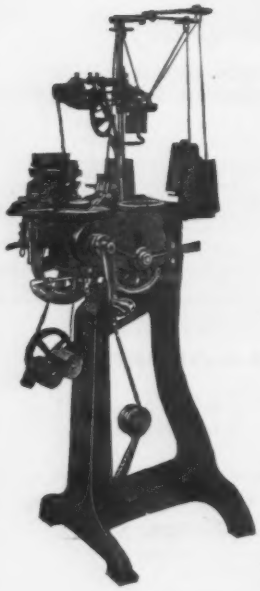
Full Automatic Hosiery Footers

BODY MACHINES, SLEEVERS, etc.

for Underwear, Sweaters, Toques, etc.

NECKTIE MACHINES

for making all kinds of tubular knitted scarfs.
Write for catalog, prices and samples.



THE INVINCIBLE

Full Automatic Knitter

"The Knitter That Knits"

All The Time

SEAMLESS HOSIERY
OF
QUALITY

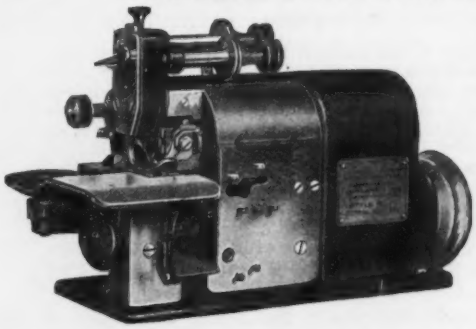
JENCKES KNITTING MACHINE CO.
Pawtucket, R. I.

Philadelphia Show Rooms, 1211-1217 Filbert Street

The Merrow

FAST
DURABLE
Light Running

High Speed Overseaming, Overedging and Shell Stitch Machines are



OUR CLASS 60 MACHINES for Trimming and Overseaming in one Operation produce the strongest, best Seams and do it with the greatest economy.

USE STYLE 18 for Horse Blankets. STYLE 17 B or 22 for Bed Blankets. STYLE 35 E SHELL, for Necks and Fronts of Rib Goods, produces the most showy, substantial finish.

Send for Catalogue and Samples.

THE MERROW MACHINE CO. HARTFORD, CONN.

Knickerbocker Building, Sixth and Arch Sts., Phila. 467 Broadway, cor. Grand St., N.Y.
815 Van Buren St., Chicago, Ill. 1019 E. Baltimore St., Baltimore, Md.

Imported Knitting Machines of Quality

SPECIALTIES

Karl Lieberknecht, Oberlungwitz, Saxony

FULL FASHIONED MACHINES. "System Cotton" for plain and ribbed Hosiery, Underwear, Gloves and Neckties.

RIB MACHINES, high speed, for Rib Tops, Neckties, Hosiery in plain, striped and accordion effects.

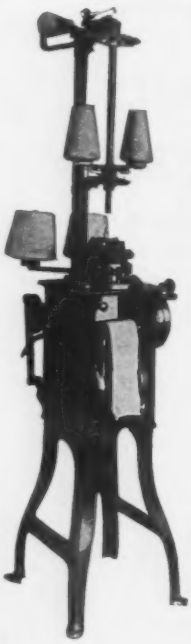
WARP MACHINES **(150 COURSES PER MINUTE)** for Tricot Fabrics.

Otto Seifert, Burgstaedt, Saxony

WARP MACHINES, for Elastic Hat Bands, Mourning Bands, Shawls and Scarfs.

JACQUARD WARP MACHINES, for Veilings, Laces, Shawls, Insertions, etc.

Louis Hirsch 173-177 Lafayette St., New York City
Sole Representative in U. S. and Canada



The "Five-In-One"

Automatic Knitting Machine

In last month's Textile World Record we gave 5 reasons—sufficient in themselves—for the greater economy and efficiency of the new A. N. Ames Automatic ("Five-In-One") Knitting Machine.

Here are 5 more points (6 to 10) of the 25 points that make it pay:

6. When necessary to use springs, long coil springs are used because they give best results.
7. The measuring device is the simplest on the market. It will measure the shortest or the longest stocking, infants or ladies. The leg, foot, or ankle can be lengthened or shortened independent of each other.
8. A special device enables it to be run either single or double feed without changing the pattern.
9. There are no complications of gearing or dials, no chains or loose parts to cause trouble by falling off.
10. The heel and toe measuring device can be adapted for any number of needles. The head is centrally located, insuring perfect balance.

These facts prove the value to you of the Ames Automatic Knitting Machine. You will find 5 more "reasons why" in next month's Textile World Record. But send now for full details.

The A. N. Ames Knitting Machine Company
Factory and Main Office, Main St., Franklin, N. H.

THE MOST COMPLETE LINE OF

Sweater Coat Machines

Automatic Racking Machines with or without striping attachments.
Herring Bone Stitch Coat Machines.
Plain Sweater Coat Machines.
Pineapple Stitch Sweater Machines.
Jersey Sweater Machines.
Plain Binding Machines.
Rotary Jacquard Binding Machines.

FOR INFORMATION, ADDRESS

STAFFORD & HOLT,

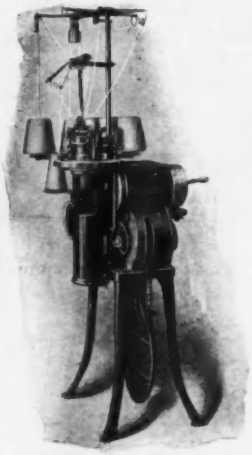
LITTLE FALLS, · NEW YORK, U. S. A.

A New System of Machinery for Producing Seamless Hosiery

Scott & Williams Model B

(Incorporated)

Replacing Former Model B



Five Yarn Changes.
Sectional slackening prior to the heavy yarn changes, thereby preventing cutting and waste.
Fabric also slackened where high splicing yarn is inserted, thus insuring narrow ankle and foot.
For transfer work less moves than any other machine on the market.

Scott & Williams Model F

(Incorporated)

The most comprehensive machine ever offered to the trade.
Makes women's hose with integral welt—no sewing necessary.
Or will make women's hose with selvage top, using any kind of yarn from silk to carded cotton.
Makes half hose without a transfer.
All dropped from the machine—looping alone required.
Anti-run-back course preventing ravelling from garter tears and other causes.
This machine may also be used for making string work, or half hose transferred in the old fashioned way.

Philadelphia **SCOTT & WILLIAMS, Inc., 88 Pearl Street, Boston, Mass.** Utica

The Reece Button-Hole Machine

For Cutting and Stitching Straight Double-Barred Buttonholes

This machine is designed for cutting and stitching straight double-barred buttonholes without eyelets, from ⅛ of an inch in length up to 1 inch, in knit goods, shirts, shirtbands, collars, cuffs, etc, also on knit goods of all kinds. It is superior to all other machines, as it is the *only single thread* buttonhole machine on the market doing away with the bobbin or under thread, thereby making a great saving in the use of thread, and *it will produce more than double the quantity of work of any other machine*, thus saving the employment of an extra operator and the space of an extra machine. The quality of the work produced is superior to any other buttonhole, from the fact that the stitch is elastic, which is an important factor in knit goods. This machine is automatic in all its movements, and is an easy machine to handle, and does not require the services of a skilled operator, no cutting or pulling of the thread required, and when the buttonhole comes from the machine, it is finished in every respect and does not require to be trimmed or cut. The length of hole required can be obtained by simply turning a screw.

The machine is made of hardened steel drop forgings, thus reducing the breaking and wearing of parts to a minimum. *Samples of work and terms sent on application.*

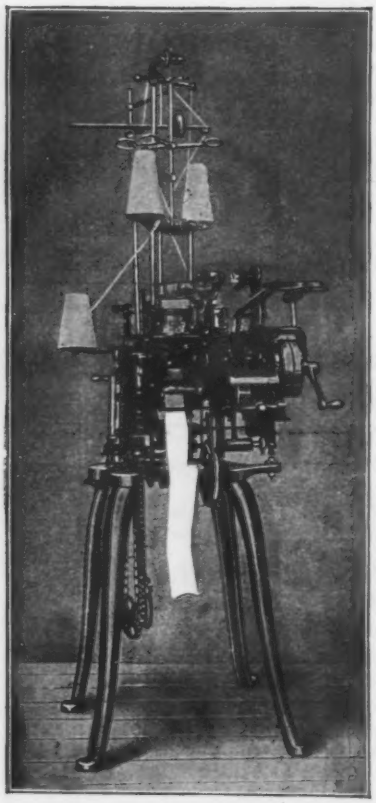
THE REECE BUTTON-HOLE MACHINE CO.

Office and Factory - 500 to 514 Harrison Avenue, Boston, Mass.

PAXTON & O'NEILL

Full Automatic

Yarn Changers and Platers



Easy Transfer

Accurate Measuring Device

Produce Finest Fabric Made On Any Latch Needle Machine

FOR LADIES or HALF HOSE

Makes Ladies' Hose with Garter Top.
No Ravel;
Silk, Plated, or Mercerized Leg.
High Splice, Double Sole, with Advanced Toe, Linen or Mercerized Heel and Toe.

PAXTON & O'NEILL

537-41 North Third Street, Philadelphia

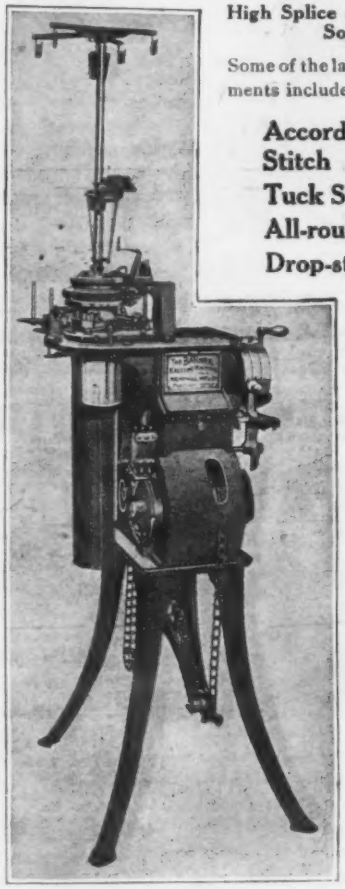
"THE BANNER"
HEMPHILL'S LATEST

FULL AUTOMATIC MACHINE

The First Practical Revolving Cylinder Machine on the Market

Built for either plain or split foot work, single or double feed. Adapted to manufacture hose with linen or mercerized heel or toe.

Also for Plaited Goods, Silk and String Work



High Splice and Double Sole

Some of the latest improvements include:

Accordion Stitch
Tuck Stitch
All-round Drop-stitch

These Improvements are fully AUTOMATIC

Largest Production

More Yarn Changes

Highest Speed

Simplest

Least Repairs

Over 2500 sold and delivered the first half of the present year

PRODUCES A SUPERIOR QUALITY OF WORK

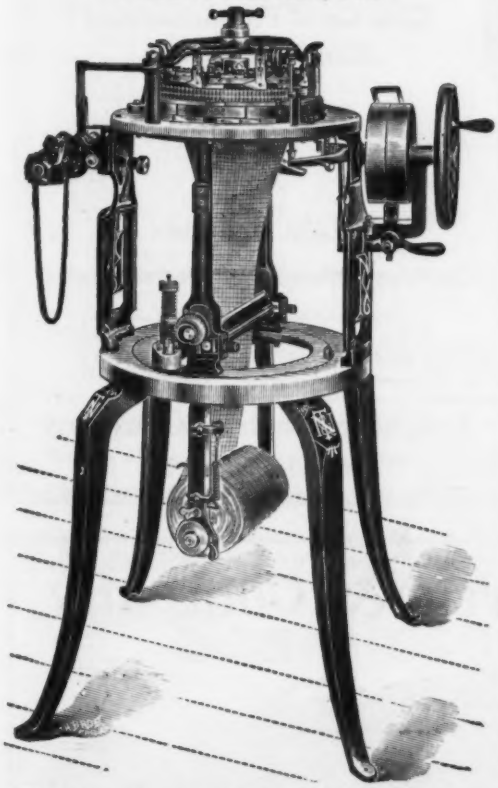
Hemphill Mfg. Co.

131 Clay Street - PAWTUCKET, R. I.

Average Production 100 Machines a Week

NYE & TREDICK CO.

718-720 Cherry Street
PHILADELPHIA, PA.



Circular Rib Knitting MACHINERY

For making Ribbed Underwear, Combination Suits, Sweaters, Cuffs, Shirt Borders, Hosiery, etc. Correct Construction, Excellence and Durability.

LATEST IMPROVEMENTS

Quality of Fabrics and Production
UNEXCELLED

NYE & TREDICK CO.

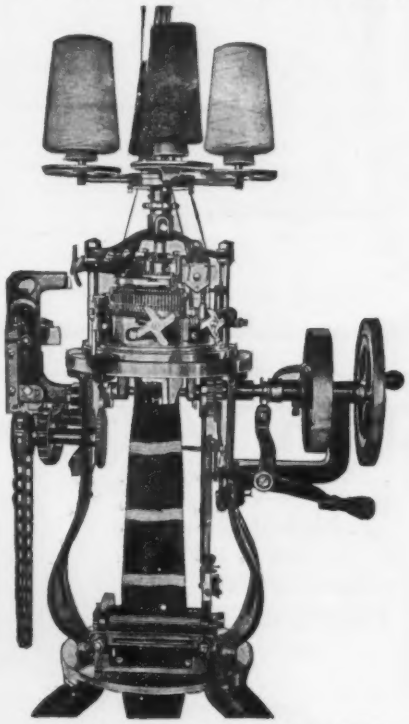
1914

CRANE MFG. CO.

Established 1870 LAKEPORT, N. H. Incorporated 1890

Spring and Latch Needle Machines

for Both Rib and Plain Work
Economically Producing
A GREAT VARIETY OF FABRICS



IMPROVED AUTOMATIC TOQUE MACHINE

Made in sizes from 5″ to 7″ inclusive, of any desired gauge; these measurements being back to back of cylinder needles.

These machines are built in a thorough and workmanlike manner and are second to none in the market.

The Crawford stop-motion is applied when requested

SOME CRANE FEATURES.

Patent removable hardened Wing Burr Wheels.
Patent Thread Stop Motion can be fitted to 20 in. and 40 in. frames and are specially adapted for making fine Jersey Cloth and Stockinet.
Our flat machine is adapted for knitting collarettes.

Leighton Improved Circular Knitting Machines

FOR SWEATER COATS

Give Good Production and Excellent Quality

IN

Automatic Racked Fancy

OR

Plain Stitches

On Wool, Worsted or Cotton Plated

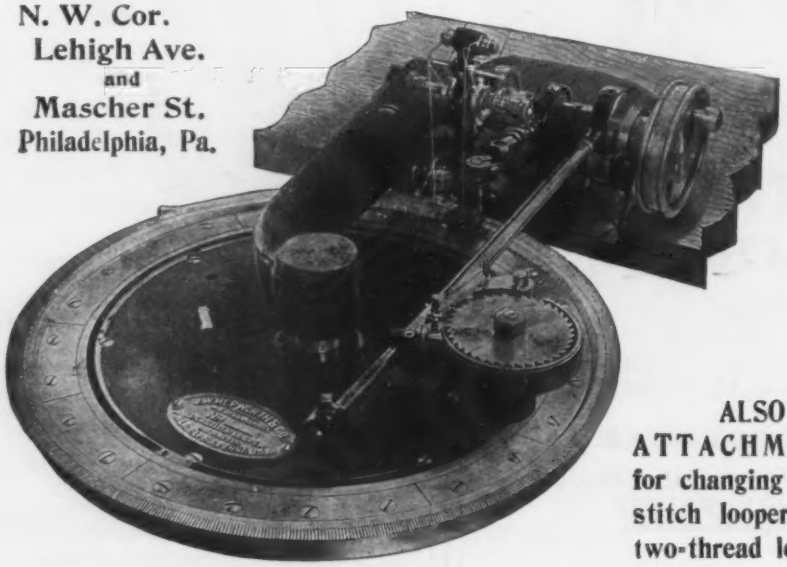
We also Build Jersey or Ribbed Underwear Machines, 4 to 16 Feeds

Leighton Machine Company

Manchester, N. H.

John W. Hepworth & Company

N. W. Cor.
Lehigh Ave.
and
Mascher St.
Philadelphia, Pa.



Makers of Two Thread Elastic Lock Stitch Loopers

ALSO
ATTACHMENTS
for changing our single stitch loopers into the two-thread loopers.

JAMES TAYLOR, 216 N. Front St. Philadelphia, Pa.

ALL KINDS OF NEW AND SECOND HAND **KNITTING MACHINERY**

A RARE OPPORTUNITY TO BUY

10 Lamb & Grosser Sweater Machines.
3 Large Crawford Hollow Plate Presses.
1 Allen 40 Spindle Cop Winder.
54 Standard "B" Knitters for sizes.
24 Mayo "Acme" " " "
2 Complete Hosiery Plants.
1 Boomer & Boshert Cold Press.
1 Crane Style Collarette Machine 20", 16 to in.
1 Rotary Fire Pump. 3 Small Pumps.
2 Toque Machines.
4 Hosiery Dryers.
14 Cornely Hosiery Embroidery Machines.
500 Dozen Hosiery Shaping Boards.
1 Caligraph Typewriter.
1 Complete Plant for Mfg. Hosiery
1 ½ h. p. Electric Motor.
1 Singer Nat. Button-hole Machine.
500 Payne Winder Bobbins.
100 ¾ Aut. Knitters, various makes and sizes.
1 Payne 40 Spindle Skein Winder.
1 Abel 36 Spindle Cop Winder.
1 Union Special Overedge, Style 15.400.
4 Climax High Speed Motions for Ribbers.
1 Underwear Mangle.
Lot Electric Stop Motions for flat Machines.
1 Merrow No. 60.
1 Crawford 17 Plate Press.
1 Blickensderfer Typewriter
5 Band Folding and Cutting Machines.
1 Curtis & Marble Napper, 66".
30 Sweater Coat Machines various styles.
8 Jones Fleecers, 24x36".
1 Underwear Knitting Plant.
2 Singeing Machines.
1 Hosiery Printing Press.
4 Hosiery Lever Presses.
42 Union Spec. Sewing Machines, various styles
50 Loopers and Seamers, all makes.
60 Ribbed Underwear Machines.
100 Hosiery Ribbers and Sleevers.

WRITE FOR COMPLETE LIST. APPRAISEMENTS A SPECIALTY

We are always in the market to buy good Second-Hand Knitting and Finishing Machinery.

The New Boss Seamless Knitter

Do you want the biggest production with the least menders, for the least money? If so, write to the Boss Knitting Machine Works for their circular with full directions. There is no cylinder to be handled. We use only one cylinder and transfer device for half hose or ladies' hose. This machine beats them all. Has no equal for simplicity and durability. Makes 300 revolutions per minute. Built in sizes from 2¼ to 5½; from 40 to 224 needles. Automatic in heel and toe. It is the strongest built knitter on earth.

Send for prices and particulars.

THE BOSS KNITTING MACHINE WORKS,
Cor. Elm and Reed Sts., Reading, Pa.

The Elastic Stitch Keeps the Buttons on

The Elastic Stitch Button Sewing Machine successfully overcomes button sewing troubles: Because

(1) It does not pull the button down tight on the fabric.
(2) It leaves an allowance for thread shrinkage.
(3) Only one thread is used.
(4) There is no bobbin winding—no shuttle mechanism. No knives are used.
(5) It leaves a neat and uniform finish on EACH and EVERY button.

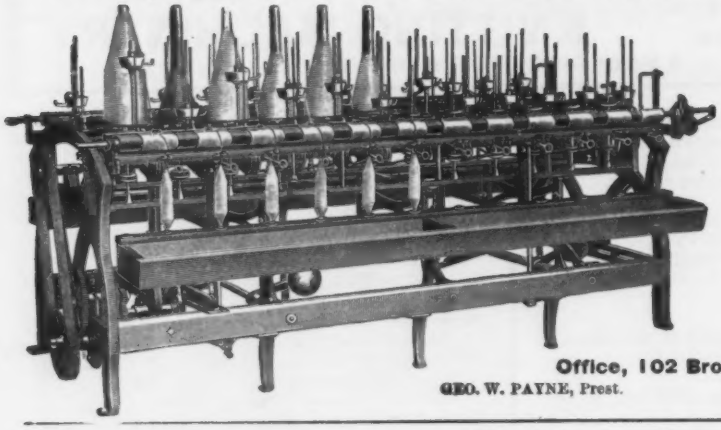
The simplicity of operation insures reduced expenses and increased production. Let us demonstrate these facts to you.

"List-of-Users" Booklet sent on request

Union Button Sewing Co.
394 Atlantic Ave., Boston, Mass.

OVER 1,900 PAYNE WINDERS IN USE

By Hosiery Manufacturers, Wind for Cop, Skein or Bobbin,



Improved

Upright Spoolers

To Spool from Cop, Skein or Bobbin

Doubling Spoolers for doubling 2, 3, or more ends into one.

Upright Quillers, Quill from Cop, Skein or Bobbin.

Ring Dresser, Spooler and Reel Spindles, Cop Skewers Warp, Spool, Spooler, Guides Bolsters and Stops Made and Repaired at Short Notice.

GEO. W. PAYNE CO.

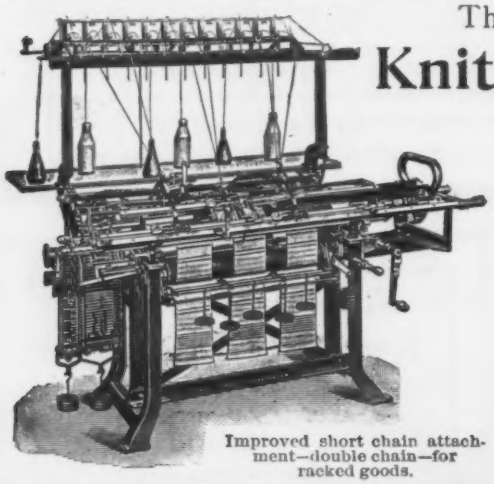
(Est. 1865. Inc. 1903)

Office, 102 Broad Street, Pawtucket, R. I.

GEO. W. PAYNE, Prest. CLINTON F. PAYNE, Sec'y and Treas.

That is the Brand of the

Knitting Machines



worldwide known to be **The Best**

160,000 Knitting Machines in use all over the Universe

CLAES & FLENTJE

Muhlhausen Thr., Germany

(Largest Knitting Machine Factory in the World)

The cut represents one of our full automatic machines with double chain, short chain attachment, doing away with the long chain and lots of blocks.

Machines for all kinds of plain and fancy knit goods by hand and full automatic by power.

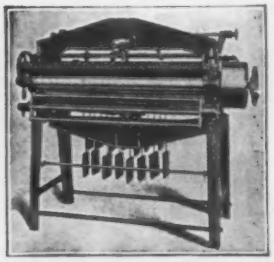
Our knitting machines are far superior to any other in simplicity and construction. They give a higher production than any other on the market.

For full particulars, needles and supplies for all kinds of knitting machines, write to

Improved short chain attachment—double chain—for racked goods.

Ainslie Knitting Machine Co.

281 Ainslie Street **Brooklyn, N. Y.**



The "1912" Cloth Cutting Folding and Winding Machine.

This machine will cut down operating expenses. It does in one operation the work which is now being done in two. It cuts the cloth, folds the edges and rolls them up in one operation, and at all times gets one more strip out of a bolt of cloth than is possible with the old method of cutting. At the same time it measures the bolt of cloth to show the manufacturer whether or not he is getting the number of yards he is paying for. With the high price of cotton to-day every knit goods manufacturer ought to look into this to see if he is getting the maximum efficiency at the least expense. You will find when you come to figure it up in the course of a year that the labor it saves is a big item.

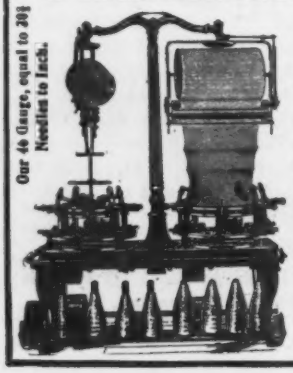
Also have other labor-saving devices, and upon application you can get prices and full information on same.

Joseph A. Firsching, 22-28 John Street Utica, N. Y., U. S. A.

We are the Oldest Manufacturers

WITH

45 YEARS PRACTICAL EXPERIENCE



in building Spring Needle Knitting Machines. Have succeeded knitting the finest and the coarsest work ever made on Spring Needle Knitting Machines in this country, any work from 3 to 46 gauge. Our Machine is of the highest class.

Robt. W. Gormly and Company,

Troy, N. Y.

STANDARD MACHINES FOR HOSIERY MAKING

The STANDARD F,
with attachments, can make any and all of these fabrics:

- Plain Goods
- Plaited Work
- Three Color Stripes
- Tipped Heel and Toe
- White Foot
- Changed Heel and Toe
- Garter Top
- Loopers Slack Course

Most Stockings — Best Fabrics Longest Life

Standard Machine Company
OFFICE AND SHOW ROOMS
330-348 North 12th Street
Philadelphia, Pa.

"ACME"
Hosiery and Textile Binder
No. 30

A Simple, Inexpensive Machine for Attaching Tickets on Hosiery, Underwear, etc.
It uses a pointed staple, **CANNOT INJURE THE FINEST SILK HOSE;** can be set aside when not in use.
Is operated by foot power and has a **patented WORK-HOLDING DEVICE carrying one dozen or more pairs of hose, keeping them in perfect alignment and presenting the tops in position to receive the tickets AT LEAST TWENTY-FIVE PER CENT QUICKER** than by any other method now in use.
For particulars and the address of the nearest agency

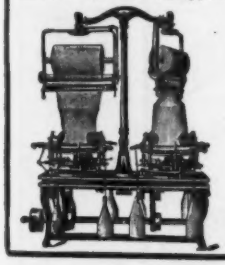
Apply to the Manufacturers

The Acme Staple Company
Camden, N. J.

We Are the Oldest Manufacturers
IN THE WESTERN HEMISPHERE
Of Circular Spring Needle Loop-Wheel Knitting Machinery.

TOMPKINS BROS. CO., Troy, N.Y.

We submit the following extract from the sworn testimony of R. W. Gormly, in U. S. Circuit Court, Northern District of New York, in equity, No. 6764:
Cross Question 123. How long have you been a manufacturer of knitting machines? Answer I started in this business about the middle of May, 1900.



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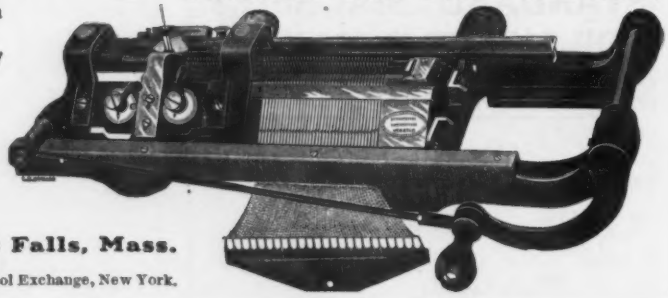

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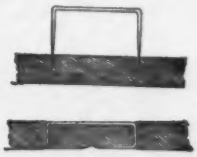
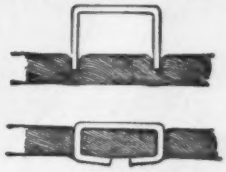


The fine points escape the threads and do not break them. The staple ends lie perfectly flat and smooth and do not stick up to catch on other goods. The stitch is readily picked out with the fingers.

THE STITCH OF OTHER MACHINES USING THE HEAVY WIRE



The coarse heavy wire and the blunt staples break the threads and leave unsightly holes after they are removed and require a knife to extract the stitch.

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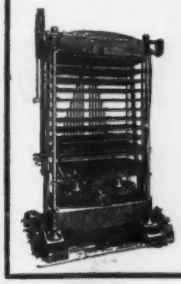

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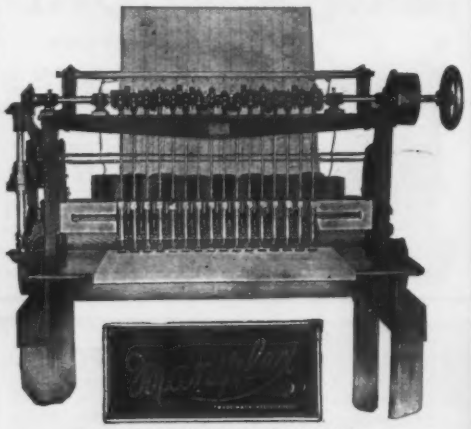

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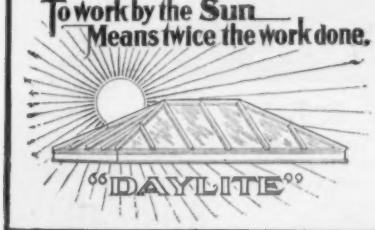

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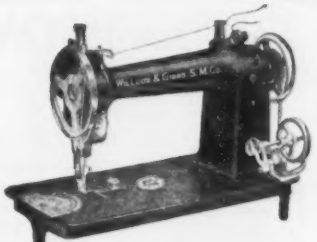

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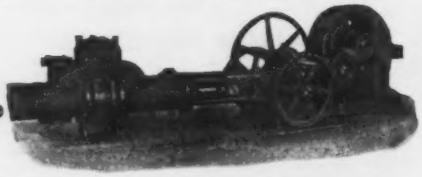

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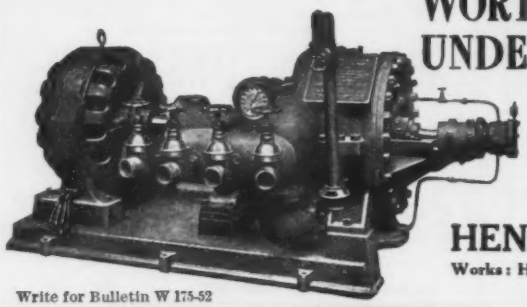

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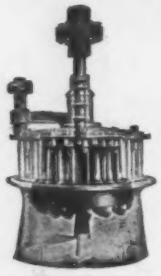

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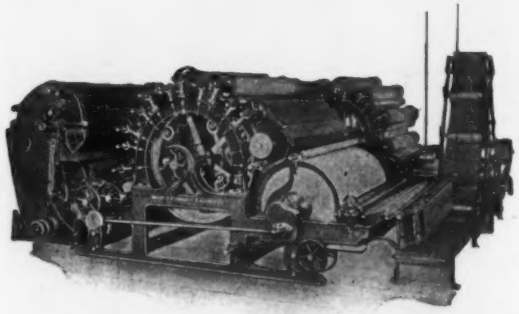

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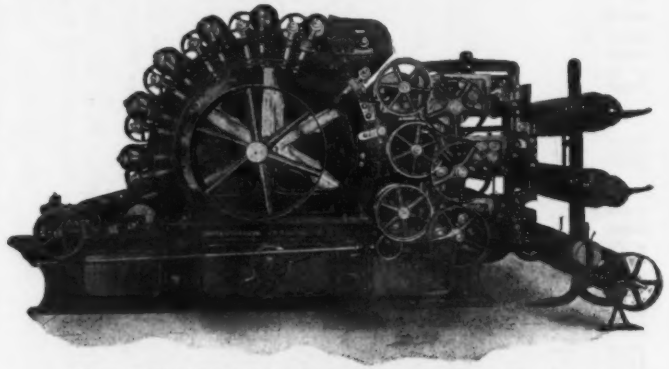

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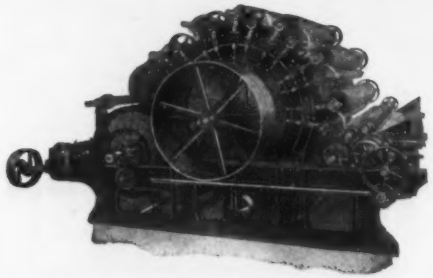

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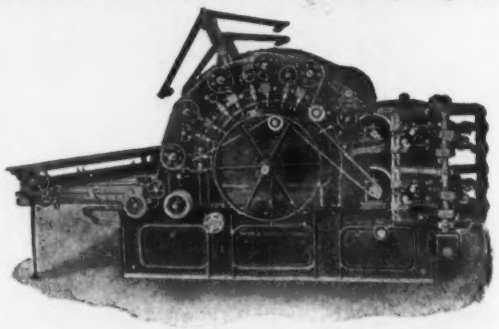

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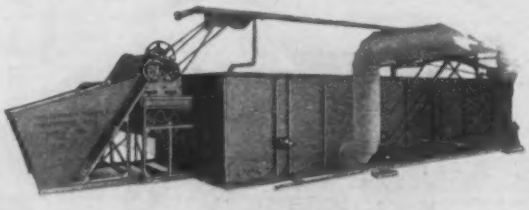

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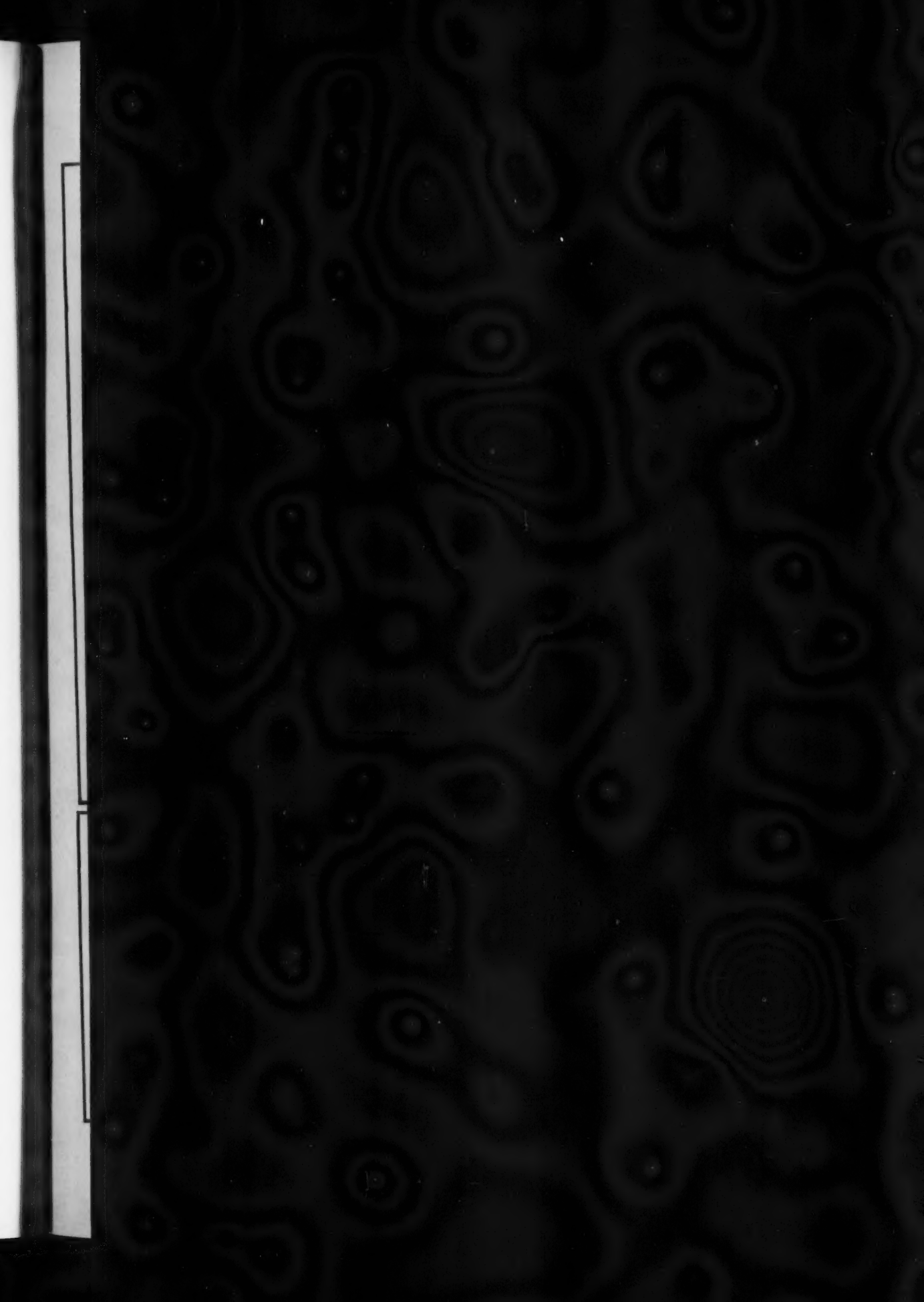

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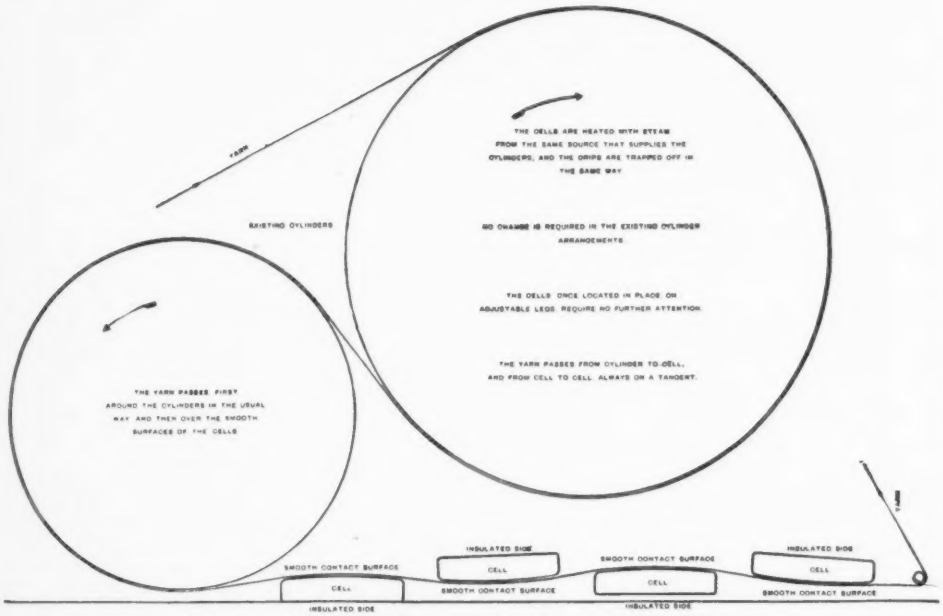
YARN
EXISTING CYLINDERS
THE YARN PASSES FIRST AROUND THE CYLINDERS IN THE USUAL WAY AND THEN OVER THE SMOOTH SURFACES OF THE CELLS
THE CELLS ARE HEATED WITH STEAM FROM THE SAME SOURCE THAT SUPPLIES THE CYLINDERS, AND THE DRIPS ARE TRAPPED OFF IN THE SAME WAY
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THE CELLS ONCE LOCATED IN PLACE ON ADJUSTABLE LEGS REQUIRE NO FURTHER ATTENTION
THE YARN PASSES FROM CYLINDER TO CELL, AND FROM CELL TO CELL ALWAYS ON A TANGENT.
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CELL
INSULATED SIDE
INSULATED SIDE
CELL
SMOOTH CONTACT SURFACE
SMOOTH CONTACT SURFACE
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CELL
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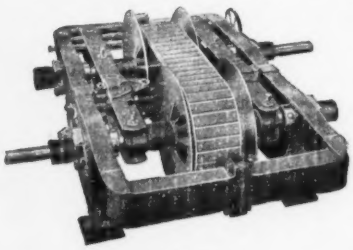

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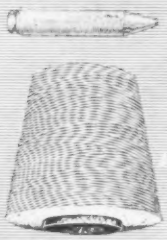

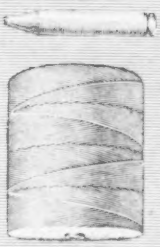

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